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Telephone: WHITEhall 9233 (12 lines). Telegrams: "Trazette, Parl, London"

BRANCH OFFICES

GLASGOW: 87, Union Street Central 4646
NEWCASTLE-ON-TYNE: 21, Mosley Street Newcastle-on-Tyne 22239
MANCHESTER: Century House, St. Peter's Square Central 3101
BIRMINGHAM: 90, Hagley Road, Edgbaston Edgbaston 2466
LEEDS: 70, Albion Street Leeds 27174
BRISTOL: 8, Upper Berkeley Place, Clifton Bristol 21930

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New Prospects for Electrification

IN beginning public services between Lancaster and Heysham last Monday with electric trains operating on single-phase alternating current at the industrial frequency, the Railway Executive has implemented a recommendation of the British Transport Commission 1951 report on electrification of railways that trials with this form of motive power should be undertaken. Since that time 50-cycle traction has been adopted on commercial and economic, rather than experimental, grounds in the Belgian Congo, and the forthcoming extension of the same principle to the Valenciennes-Thionville main line of the French National Railways suggests strong confidence in its future. Development has been accompanied by various optimistic and sweeping forecasts, but the Railway Executive has emphasised that the present Lancaster-Heysham services are experimental, and that other methods of 50-cycle traction as well as the form adopted in the motor coach stock now operating will be examined. Motor coaches with 50-cycle equipment are already in operation on a S.N.C.F. branch in the French Alps, and when the Valenciennes-Thionville scheme is working there will be examples of such motive power in use on services ranging from suburban passenger to heavy goods traffic. Three main classifications of electric traction equipment will then be represented, so

that it is fair to say that not only is there no general agreement on a single type of apparatus, but that the various versions so far produced do not yet possess, individually, the flexibility of application which is so desirable in an electric locomotive. Some of the limitations on the use of 50-cycle traction on a wide scale in Great Britain were mentioned by Mr. C. M. Cock in his presidential address to the Institution of Locomotive Engineers last year. Considering only its application to suburban services, there are various problems involved in the accommodation in motor coach stock, where maximum passenger capacity is desirable, of auxiliaries such as motor blowers, chokes, and filters. Beyond this there lies the question of ascertaining in practice the effect on an industrial distribution system of the single-phase traction load. Every new experimental undertaking in this field is, therefore, of world-wide interest.

Crewe Pupils and Premiums Dinner Revival

IN our July 10 issue, we suggested that the laying of the foundation stone of the British Railways apprentice school at Crewe in the autumn would provide a suitable opportunity for the revival of the annual dinner of Past and Present Crewe Pupils and Premiums, which up to 1939 had been held for nearly half a century. It is gratifying to know that that suggestion has evoked a very good response and as a result of the interest which has been shown, it has been decided to hold the 50th anniversary dinner at the Crewe Arms Hotel on Monday, September 21. Mr. R. A. Riddles will be in the chair, and it is expected that between forty and fifty past Crewe Pupils and Premiums will be present. Mr. Eric A. Robinson, Managing Director of the Superheater Co. Ltd., has taken a very active part in making the arrangements for the dinner, and to him and to Mr. Riddles who has shown the keenest interest in the function, must go the credit for the revival of an important gathering of members of the railway engineering profession.

Winter Passenger Timetable Improvements

THE accelerations introduced by British Railways in their winter passenger timetables of which some details are given on another page, show the policy of providing faster services, largely implemented in the 1953 summer timetable, to be fully justified. Whilst services generally are being brought steadily back to the 1939 standard, no attempt has been made to reintroduce the prewar streamliners, which, though affording some very short journey times and in some cases deservedly popular with the travelling public, were difficult to fit in with the heavy traffic on British main lines. The present policy is to give a better all-round service rather than favour a few larger population centres. There are nevertheless many new runs at 60 m.p.h. or more. Welcome features of the new timings are restoration by the Western Region of two-hour timings between Paddington and Birmingham Snow Hill and from Bristol to Paddington. The early-morning business service from Kings Cross to the West Riding and the corresponding evening up train are to have a Newcastle portion. Perhaps the most remarkable feature is the extent and comfort of the sleeping accommodation provided for the third class passenger. Practically half of this will be in two-berth compartments, with full bedding supplied. For cheapness and comfort combined this probably is unrivalled by any other railway in the world.

New Railways in Rhodesia

THE long-discussed cut-off line between Sinoia and Kafue has been discussed by Sir Roy Welensky, Unofficial Member of the Executive and Legislative Councils of Northern Rhodesia, at a regional development congress in Southern Rhodesia. Because of the growth of traffic, he said, the Federal Government of the Rhodesias and Nyasaland would have to decide next year whether to double the existing line between Bulawayo and Wankie, and between Bulawayo and Gwelo, or build the Sinoia-Kafue line, which would considerably reduce the journey

between Northern Rhodesia and Beira, the seaport in Portuguese territory which is the main outlet on the Indian Ocean of the land-locked Rhodesias. The Bulawayo-Wankie section forms part of the main line to the north, the only link between Northern and Southern Rhodesia; some 45 miles, between Wankie and Dett, are now being realigned to increase line capacity and speeds. The line from Bulawayo to Beira is equipped with centralised train control as far as Gwelo; it continues thence to Gatooma, Salisbury and Umtali, where the Mozambique Railways take over.

Value of Sinoia-Kafue Line

FROM Sinoia, on a branch running north-westwards from Salisbury, it is only about 170 miles in a direct line to Kafue, but a railway between the two would shorten by 500 miles the haul from the Northern Rhodesian copper belt to Beira, as the traffic coming south must now pass by way of Livingstone, Bulawayo, and Gwelo. The route, which has been surveyed, would involve another crossing of the Zambesi, and the scheme would be bound up with the Kariba Gorge dam project. Its construction, which would probably take three to four years, would also be attractive from the Federal administrative viewpoint, for the line would directly connect Lusaka and Salisbury, the capitals of Northern and Southern Rhodesia respectively. On the other hand, work is in progress on a new line to the south-east intended to give Rhodesia access to another Mozambique port, Lourenço Marques. If copper exports were diverted over it to Lourenço Marques, there would be less justification for the Sinoia-Kafue link, as the traffic would still go through Livingstone and Bulawayo, as now, turning off to the south at Somabula, on the Bulawayo-Gwelo line, the junction for the Shabani branch which gives access to the south-east connection.

Overseas Railway Traffic

SOUTH African Railways total receipts during July remained steady at some £1.9 million a week, ending the month with a total slightly over last year's. Passenger receipts kept well up on the corresponding weeks of 1952. Goods receipts, other than coal and livestock, fluctuated, as did coal traffics. Aggregate railway receipts for all sources from April 1 to July 25 at £32,495,000 compare with £32,753,000 for the corresponding period of last year. Barsi Light Railway receipts for June (at Rs. 13 to the £) at some £23,000 show a decrease of £5,800 against June, 1952. The aggregate from April 1 was £87,000, a decrease of £10,000. Gold Coast Railway receipts for June were £320,354, an increase of £52,748 compared with 1952; aggregate traffics for the three months since the beginning of the financial year on April 1 are £1,069,942, against £920,111. Peruvian Corporation railway traffic receipts for July were soles 10,294,000 and bolivianos 46,775,000, representing increases of 788,000 and 30,388,000 respectively over the receipts from Peru and Bolivia for July, 1952. The Peruvian remittance rate at present is about 44 to the £. The Bolivian official remittance rate is bolivianos 537.08 to the £ for restricted amounts against bolivianos 169.61 in July, 1952. Increased boliviano rates to compensate for devaluation were in operation throughout July of this year.

British Railways Data

THE reception given in 1952 to the publication, after a lapse of five years, of "Facts and Figures about British Railways," encouraged preparation of a new edition, which has just appeared. Once again it provides in a form both compact and easy to consult the information to which all who talk or write on railway subjects should have access, and to which in moments of uncertainty they should turn before committing themselves. Many facts which it may be tedious for the impractised to elicit from annual reports are presented with the prominence they deserve, such as the surplus of receipts over expenditure achieved by British Railways in every

year since 1948. Many other details to which passing reference is made in speeches and statements during the year, but which it is often laborious to trace afterwards, have been sifted and summarised here. Examples are the diesel programme, the scope of electrification plans, and the operating economies obtained by the use of "Britannia" class locomotives in East Anglia. The booklet is, of course, concerned far more with facts than with policies, but where a trend is indicated the reason for it is explained, as in the case of accelerations being spread generally over all main-line services instead of being concentrated on a few ultra-high-speed services, with the risk of delaying numbers of other trains.

Last Train on the Lough Swilly

ON August 10 the last public train ran on the Londonderry & Lough Swilly Railway, and the company, which owned what once was the second-largest 3-ft. gauge system in Ireland, is now exclusively a road passenger and freight operator. Its first section was opened in 1863, on the broad gauge, from Londonderry to Carrowen. In 1887, the railway, which by then had thrown off a branch to Buncrana, and whose main line had reached Letterkenny over a nominally independent extension from Carrowen, was converted to the 3-ft. gauge. The spectacular 50-mile extension through the wilds of Northern Donegal from Letterkenny to Burtonport, a small fishing port on the Atlantic, was opened in 1903, providing, from Londonderry, the longest possible journey on the narrow gauge in Britain. Faced by increasing road competition which was making serious inroads into the never heavy traffic the company began in 1929 to run its own buses and subsequently withdrew its rail services in favour of road except between Londonderry and Buncrana, and Letterkenny, which continued to the end to be served by mixed trains. Some of the locomotives were of remarkable power for a line of this gauge, including two 4-8-4 tanks and two 4-8-0 tender engines, built by Hudswell Clarke, and four 4-6-0 tanks built by Andrew Barclay.

Punctuality under Pressure

RECORDS of train arrivals in the current Southern Region edition of the *British Railways Magazine* cover the four weeks to June 13 in the usual comparative tables, and also give particulars of the highly creditable results achieved on the two days of Naval Review traffic, June 15-16. The four-week figures include the Coronation period and the first week of the summer timetables. Steam passenger train arrivals averaged 1.1 min. late, and electric arrivals 0.76 min. late, these figures comparing with 0.69 min. (steam) and 0.54 min. (electric) respectively in the four weeks ended May 13. Naval Review traffic involved running 33 specials from Waterloo and 13 from Victoria to Southampton, Portsmouth, Fareham, and Gosport on June 15. Return traffic, with 53 specials, spread over to June 16. On these two days the average late arrival for all passenger trains in the Region—just over 7,000—was only 0.77 min. on June 15 and 0.68 min. on June 16. In a commentary on these figures Mr. S. W. Smart, Superintendent of Operation, draws attention to the good work by the indoor planning and outdoor operating staffs implied by these results; and he emphasises that the underlying spirit is more than a response to exceptional circumstances. He quotes a London Central District record of June 19, when 202 morning business trains arrived right time at London Bridge and Victoria between 7 a.m. and 10 a.m.

Across the U.S.A. in Fifty-Seven Hours

IT is now possible to cross the U.S.A. in a through sleeping car in an actual travelling time of 60 hr. from Los Angeles to New York. The route is the Union Pacific from Los Angeles through Salt Lake City to Omaha, the Chicago & North Western from there to Chicago, and after

a layover of 4½ hr. for working the car round from the North Western to the La Salle Street station, the New York Central from Chicago to New York. The average speed for the 3,259-mile journey, including all stops, is 54.3 m.p.h., the highest yet achieved anywhere for a through booked journey of such length. Westbound the car leaves New York at 10 p.m., and is due in Los Angeles at 9 a.m. on the morning of the third day, 62 hr. actual travelling time. As shown on another page, those prepared to change trains and stations in Chicago, as "coach" class passengers must do, can make even faster coast-to-coast journeys, down to a minimum of 58½ hr. westbound and 57 hr. eastbound. The 57-hr. journey involves a transit by rail across the United States at the average speed of 57.9 m.p.h.

Cops and Cabs

ALTHOUGH familiar in the lower forms of schools, the words cops and cabs have nothing to do with the playground reconstruction of a clash between Scotland Yard and an organisation for smuggling drugs in the spare tyres of taxis. To cop, as is now well known, is to observe an engine number not previously recorded, while to cab an engine is to be invited to mount its footplate. An engine may thus be noted in the spotter's collection as having been both copped and cabbed. This is a new refinement of engine spotting which seems to have sprung from public ownership of the railways, and a corresponding proprietorial attitude towards them that is most in evidence between the ages of ten and fourteen. Later, except among a few dedicated souls, it is often unhappily displaced by a distaste for possession such as might be felt by a man who has been left an ugly china dog and is obliged to display it continuously on his mantelpiece. Both states of mind are very different from the humility of an earlier generation for whom an invitation to the footplate was the ultimate beatitude.

New B.T.C. Chairman

THE long delay in the announcement by the Minister of Transport of the successor to Lord Hurcomb as Chairman of the British Transport Commission has now been ended. There is still no news of the other appointments which are necessary to replace Sir William Wood, and to bring the Commission up to its new strength of fourteen, as required by the Transport Act, nor of Lord Latham's successor as Chairman of the London Transport Executive.

The search for an outstanding personality to head the Commission is known to have been wide, and as apparently it was against the Government policy to seek a candidate for the highest office in transport from among those who are best acquainted by practical knowledge with its problems, it had been thought that in the present convulsion in which the transport industry of this country has been thrown by Government action, the services of an outstanding industrial personality might have been secured. The difficulties which face transport are essentially those of a vast commercial organisation during a period of transition, and the Minister himself has referred to the necessity for the holder of the Chairmanship to have qualities that are not easily found.

The leadership which at the present time is required from the top is fundamentally that needed to weld into a cohesive team the energies and loyalties of a vast number of individuals engaged in providing commercial services which are the backbone of the trade and industry of this country. To do so at the present time, when far-reaching organisational changes have been postulated by the Government but on which relatively little guidance as to detail has been given, calls for exceptional powers of understanding not only of transport as such, and civil transport at that, but of the needs of industry and commercial practice in its widest sense.

General Sir Brian Robertson is the Minister's choice for the chairmanship. At present he is engaged in Egypt,

where he is acting jointly with the British Ambassador at Cairo as representative of the Government in the negotiations with Egypt. The notice announcing his appointment states that he will take up his new duties as soon as these negotiations are sufficiently advanced. There is no indication as to when that will be, but it may be some considerable time yet. Meanwhile, Sir John Benstead, the Deputy Chairman, will act for him in any interval between the retirement of Lord Hurcomb at the end of this month, and whenever General Robertson can return to take up his new post.

With the exception of one relatively short period, when during a brief retirement he was Managing Director of Dunlop South Africa Limited, General Robertson has spent the whole of his life in the Army, where he has had a varied and frequently distinguished career. He has enjoyed a wide measure of success with a number of military and administrative problems in various parts of the world and more than once has been called on to take office in areas of unrest.

In assuming his new position, therefore, he will be no stranger to large-scale problems, although he may well find that they are of an entirely different kind from those with which he has grappled in the past. They certainly will not be less important. In the military sphere there are some well-known and well-tried rules of thumb which, with minor modifications if necessary, can be applied to most of the problems which arise, and there are powers behind the military machine which cannot be called on in civilian and commercial life.

The responsibilities and opportunities which face the new Chairman of the British Transport Commission are as great and may have as wide repercussions on the welfare of the nation as any he has experienced. How quickly and how thoroughly he can adjust himself to the needs of a civilian undertaking which has a staff of nearly 900,000 and assets not far short of £1,500,000,000, will be the test of his success. It is a formidable undertaking, and one in which he will be assured of goodwill and loyal support.

Hiatus

DESPITE the appointment of the new Chairman of the British Transport Commission, General Sir Brian Robertson, the situation of the nationalised transport undertakings remains almost as uncertain and confused as before. The new Chairman has no time for a satisfactory takeover from Lord Hurcomb, the present Chairman, who retires at the end of this month, in ten days' time. It would appear that the eight vacancies on the Commission, as enlarged by the Transport Act, 1953, are to be filled in due course by the Minister of Transport, Mr. Alan Lennox-Boyd, after consultation with Sir Brian Robertson; from the railway point of view the retirement from membership of the Commission of Sir William Wood, also at the end of this month, will further deplete that body at a time when its responsibility for the direct control of transport is being increased. Furthermore the position of Chairman of the London Transport Executive must be filled on the retirement on September 30 of Lord Latham, the present Chairman.

The statement to the House of Commons by Mr. Lennox-Boyd shortly before the House rose on July 29, that with the exception of London Transport, the Executives would come to an end on September 30, does not throw any light on what is to happen in the next six weeks. The railways more than any other activity of nationalised transport are affected; whilst road haulage, inland waterways, and hotels and catering can be carried on under the direct control of the Commission—which will be greatly reduced in power and authority until its new Chairman is well established and the new appointments to it made—and to some extent by their own momentum, some body must fill the gap left by the abolition of the Railway Executive. Whatever future degree of decentralisation to the several railways, as envisaged in the 1953 Act, may be achieved under the reorganisation scheme promised in the forthcoming White Paper, which may not take effect for

two years, the Railway Executive in the existing organisation is vested with far-reaching central managerial powers in every aspect of railway working.

The six Regions of British Railways are sufficiently autonomous, and inherit enough of the traditions of the happier days of independent company management to continue providing passenger and goods services. Soon, however, problems must arise that must be handled by central management. To whom must the Chief Regional Officers then refer? And what will be the position of departmental officers in the Regions, whose status and independence have been deliberately diminished over the last five years so as to adopt them to the functional organisation now presumably to be abolished? Without a proper machinery of central management the railways cannot function for any length of time simply by their own momentum. Decisions will be left and questions neglected which in the long run must cause delays and stoppages in various parts of the complex organisation; the longer such matters are neglected, the more difficult it will be to regain normal working.

Abolition of the Railway Executive has for over a year been a declared aim of the present Government; in his announcement on July 29 Mr. Lennox-Boyd stated that he had consulted the B.T.C. on discontinuance of the Executives and that the Commission had stated that their cessation, except for the London Transport Executive, at this juncture would help the B.T.C. in the discharge of its duties. In so far as the Commission during the interim period, until the railways are reorganised, must bear some of the responsibilities now borne by the Railway Executive, it has made a rod for its own back. No doubt much of the work now done by the Railway Executive headquarters will continue to be performed there in the name of and under the auspices of the Commission; the latter, however, seems to be in no hurry to make appointments, shift offices, or take any other action in that direction.

In any organisation managed on sound business lines, adequate provision would have been made for management to ensure normal working and relationship with clients during the interim period whilst far-reaching organisational changes were taking place. Although Mr. Lennox-Boyd was under pressure to make his statement on the future of nationalised transport before Parliament rose, it is hard to see why the statement was left so late or why, being so late, it should leave so little time for implementation of its provisions, and that at the worst season of the year. Nor, apart from the railways, is it clear why the Commission advocated almost immediate abolition of the Executives whose continuance even for a few months longer would have helped the changeover. Nor do the steps taken make for that continuity which Mr. Lennox-Boyd has stated to be desirable. For British Railways, whose plans for dealing with traffic during the coming winter must shortly be decided, this is an unfortunate period to choose. The abolition of the Railway Executive must occasion many staff changes, which create uncertainty as to their own future in the minds of those who are or may be affected. In an organisation employing 600,000, the consequential postings are bound to affect many more than those immediately concerned, and the practice during the past few months of not announcing certain appointments made on an acting basis has added to the uncertainty and confusion and lowered morale, which cannot fail to affect efficiency. Not the least of the evils of uncertainty in the matter of appointments is that of the housing shortage. Many officers, after considerable anxiety as to their future in the many cross-postings occasioned by the change, may find themselves committed to last-minute house-hunting or heavy expenditure occasioned by moving their homes, or even thereby compelled to refuse promotion.

There seems to be no valid reason for this state of affairs. The White Paper announcing the transport policy of the present Government was published in May of last year. The intention of Sir William Wood, and possibly of others, to resign in the near future was known to the Minister

several months ago. The Transport Bill, with its definite provisions as to the abolition of the Railway Executive, became law on May 6. There was then reasonable time for the Minister and his advisers to take steps to provide an interim organisation instead of leaving most of the Commission's carrying undertakings, and especially British Railways, without an effective head. With six weeks to go, the sands are running out. The appointment of Sir Brian Robertson is only one step towards filling the gap, and what he has to do before he can act effectively must take time.

Committee on Nationalised Industries

AN effective machinery by which Parliament can be kept informed of the affairs of nationalised industries is a recognised necessity; by such means the industries themselves can find a channel for presenting their case to Parliament and the public, just as Parliament can gain the knowledge it needs of the activities of undertakings involving such large capital investment, income and expenditure, with a Treasury guarantee of interest on their stocks. The task of finding the best method for this purpose was referred to a Select Committee on Nationalised Industries under the chairmanship of Mr. Ralph Assheton, whose report was published on August 12. After reviewing the evidence presented at the seventeen meetings, it has been concluded that a committee of the House of Commons should be appointed by Standing Order with the object of informing Parliament of the aims, activities, and problems of the national corporations, but not of controlling their work.

Arguments both for and against such a committee were presented, and among the witnesses in favour was Lord Hurcomb, Chairman of the British Transport Commission, who thought it would satisfy the "very legitimate demand of Parliament" for a greater knowledge of the affairs of the nationalised concerns than could be got in debate. He saw in such a committee a channel of great value through which Members of Parliament could convey suggestions for improvement by a method other than attack or public speech. Lord Hurcomb also spoke of the reverse operation, saying that one of the greatest handicaps under which anyone in his position suffered was that he got no opportunity of stating his own case or of explaining his difficulties direct to Members of Parliament. He had come to the conclusion during the previous eighteen months that a great many misapprehensions existed and that perhaps decisions were taken on some supposition of fact which was not correct. Mr. Hugh Molson, M.P., thought that a committee would approach questions such as the closing of uneconomic branch lines in a manner free from the political pressures that were often exerted in local discussions of the subject.

Among those who did not favour a committee of the type proposed, Sir Geoffrey Heyworth expressed the misgivings of many when he spoke of the effect on those responsible for policy of knowing that their decisions might be liable to continuous scrutiny. Decisions had to be taken in situations that were fluid, and a course of action chosen might be proved wrong in a few weeks, or even hours. On a long view the final result might be satisfactory, but he felt himself that the knowledge of having somebody "looking over his shoulder" would be paralysing when making these day-to-day decisions. The Select Committee in its report gives full weight to this and other opposing points of view, and in putting forward its recommendation of a committee postulates the necessity of its setting up "a tradition of conduct which will result in its being regarded by the various boards not as an enemy or a critic, but as a confidant, and a protection against irresponsible pressure, as well as a guardian of the public interests." The likelihood of this unexceptionable recommendation being realised will be judged differently according to the optimism or scepticism of individuals. The need for an independent transport organisation with Government representatives appointed to

watch it in the public interest was mentioned in the paper on British transport prospects read by Mr. A. J. Pearson, Chief Officer (Administration), the Railway Executive, to the Institute of Transport on March 16. With the organisation still not finally defined, a mandate has been drawn up for its guardian committee in terms giving the impression that the authors of the plan present it with more hope for its successful evolution than conviction in its immediate efficacy.

South African Railways Budget

A NET deficit of £4,749,930 on all South African Railways & Harbours services for the 1952-53 financial year was announced by Mr. P. O. Sauer, South African Minister of Transport, when he presented the railway budget earlier this month. He proposed to meet it from the rates equalisation fund, which would leave a credit balance in the fund of £2,630,063. For 1953-54 the Minister budgeted for a net deficit of £3,891,000. This was mainly because the increased tariffs would not apply over a full year, whereas provision for expenditure had to be made for the entire period. During the past financial year more than 69,000,000 tons of goods traffic were hauled, exceeding the previous year's record by nearly 4,000,000 tons.

The downward trend in passenger traffic in the past few years took an upward turn during 1952-53, the total number of passenger journeys increasing from 261,820,463 for the previous financial year to 268,743,474. The progress made on the doubling of the line between Bosrand and Van Tonder in the Free State, Broughton and Umbulwana in Natal, Vereeniging and Union, and Vereeniging and Midway in the Transvaal, and the regrading scheme in the Cape Midlands, was of particular significance to operating efficiency.

The estimated expenditure on capital and betterment works for the year 1953-54 amounted to £39,819,089. Although the amount was about £9,500,000 more than that provided for in the original estimates for 1952-53 a sum of £3,000,000 represented working capital which was not new money. The contemplated works had again been arranged in order of priority and provision had been made for the construction of four new lines.

In the debate on the budget it was alleged that the recent 15 per cent increase in railway rates had been applied to harbours and airways, and that as services were run at a profit it was unfair that they should bear railway losses. Other speakers said that the S.A.R. tariffs had risen by only 50 per cent since the war and were still among the lowest in the world, and that claims cost the Administration £650,000 a year, or about 15 per cent of the net loss on all services.

Government critics called for a revision of railway tariffs on the lines of the Newton Report, the setting-up of a permanent rating commission, and the separation of railways, harbours and airways. The Newton Report was published in 1950, being the recommendations of a Committee appointed in 1947 to inquire into S.A.R. tariffs, under the chairmanship of Sir Charles Newton. This committee found that rates chargeable on much low-class traffic did not cover direct costs, and stressed that every rate should more than cover such costs, though no rate should exceed what the traffic could reasonably bear. It advocated the establishment of a rates commission, as in other countries, to control rates in the general public interest and ensure that they were based on business principles. Mr. Sauer replied that the Government had accepted the Report and a revision of rates in its terms would be completed by next March.

In East Africa a demand in some quarters about two years ago for separating railways and harbours found expression in the findings of a committee which inquired into the working of the port of Mombasa. The policy of unified control of transport in the East African territories was, however, upheld by the East Africa High Commission in its subsequent report on the findings.

Permanent Way Research in the U.S.A.

THE importance of bolt-hole cracks and rail-end fillet failures and of the necessity for clean hole-drilling have been emphasised by Mr. G. M. Magee, Director of Engineering Research, Association of American Railroads, in his address in Chicago to the Maintenance of Way Club, wherein he outlined some of the work being carried out under his supervision. To ascertain the effect of normal drilling practice upon the likelihood of cracks developing, numerous 3-in. lengths of rail with bolt-holes at the centre were tested in a Sonntag fatigue-testing machine, and flexed so that reverse tension and compression stresses were produced in the web. Some of these test specimens had cleanly-drilled holes, but others were improperly drilled and had burrs or gouges around them. Different loadings were exerted and the number of cycles was noted before failure occurred. It was found that the faultily-drilled specimens had an appreciably lower resistance to bolt-hole cracking.

Referring to the effect of impact on joint-sleepers, Mr. Magee said that last year's tests on the Chicago & North Western system had shown that a good joint having tight-fitting fishplates and little batter, like a welded joint, produced additional impact effect due to the joint of only about 5 per cent or less, whereas the effect of a bad joint varied from 50 to 60 per cent extra, the figure depending upon the size of the joint gap. On the other hand, it was found that with a welded joint a perfect running surface was not always obtained, and in some cases depressions of as much as $\frac{1}{2}$ in. extending over a length of about 6 in. were noted. An effective grinding and finishing was, therefore, essential if a good running surface was to be obtained.

There had been some doubt as to the limit that should be set on the extent to which the grinding of reformed fishplates—to eradicate shallow cracks—was permissible. Tests had therefore been carried out at the University of Illinois proving that grinding could safely be undertaken to a depth of $\frac{1}{4}$ in.; if a greater depth was required the plates should be scrapped.

Sleeper-wear he attributes mainly to one or more of the following causes: (1) intensity of vertical pressure on the soleplate, (2) lateral movement of the plate, (3) softening of the timber, fibres due to water collecting under the plate, (4) erosion of the fibres due to the movement of this sand-impregnated water induced by repeated loading, and (5) chemical deterioration of the fibres produced by the corrosion of the plate and spikes. He stressed the important part played by water in sleeper-wear. To combat the lateral motion of soleplates, exhaustive tests were being conducted on the Louisville & Nashville Railroad with various types of holding-down fastenings and bearing pads. As, however, it would be many years before conclusive results could be obtained, tests were also being carried out at the Central Research Laboratory of the A.A.R. to provide early information on the subject.

These tests were designed to produce track conditions as nearly as possible, and to cause considerable sleeper-wear in a period of weeks. The special testing machines used applied rapidly-repeated vertical loadings of 20,000 lb. simultaneously with alternate lateral loads of 5,000 lb. in the inward and 10,000 lb. in the outward direction. Meanwhile water and sand were continuously fed to the soleplate holes and round the plate. Within about two weeks 5,000,000 cycles of loading could thus be applied, the equivalent of 15 to 20 years' traffic on a line of moderate importance. Under this intensive treatment a soleplate secured by four dog-spikes was found to cut $\frac{1}{2}$ in. into an 8-in. \times 14-in. treated Douglas fir sleeper. Another type of fastening restricting lateral movement was then used, and this reduced the depth of wear or cut to $\frac{1}{4}$ in. Finally, a pad was fitted under the plate which sealed itself to the sleeper to the exclusion of water. Sleeper-wear was then reduced to a negligible quantity under the 5,000,000 cycles of loading. The Louisville & Nashville road tests to date tended to confirm these results.

LETTERS TO THE EDITOR

(The Editor is not responsible for opinions of correspondents)

British Railways Catering

August 10

SIR,—I heartily agree with the writer of the *Daily Mail* letter in The Scrap Heap in your issue of July 31. There was no choice for lunch and dinner in the "Rheingold" recently, with no vegetables other than potatoes and very uninteresting sweets for 11s. 4d., service included. The Manchester-Harwich boat train in each direction made available the choice of three main dishes, second helpings offered, two vegetables and attractive sweets for 7s. 6d. Cooking and service in each case were good.

Yours faithfully,

R. C. HADFIELD

24, Nursery Avenue, Hale, Cheshire

Railway Statistics

August 14

SIR,—I see from your issue of today's date that 251,651 passengers left the London termini on Saturday, August 8.

It would be interesting to learn how such a precise figure was arrived at. Obviously nobody counted heads in trains, and if a general estimate of through-booking passengers likely to be using trains on that day was included, then to produce a final figure correct to the odd one makes a mockery of statistics.

With a total of this size surely a figure of "about 251,500," or even 252,000 would be more credible?

Yours faithfully,

J. C. ALDRIDGE

23, The Ridge, Coulsdon, Surrey

[The normal practice of the Railway Executive, which supplied the figures, is to round off totals to a significant figure.—ED., R.G.]

The Harrow Accident

August 8

SIR,—In my letter published in your issue of August 7, I suggested that accidental snapping off of the bottom drain cock on the left-hand middle water gauge cock in the up express might have been the cause of the accident. I was not referring to a sound drain cock, because a phosphor-bronze male screw end of cock $1\frac{1}{8}$ in. dia. and $\frac{1}{2}$ in. long, 12 threads per in., with a $\frac{3}{8}$ -in. hole through centre would need a heavy blow to snap.

The cock probably had been overstrained in fitting, causing a creeping fracture at the root of the threaded boss. This would stand the working stresses for a time, and then suddenly snap. I have known cases.

Yours faithfully,

T. LAWRENCE

27, Church Street, Harwich

August 4

SIR,—The Inspecting Officer states in his report that "he is convinced that the distant signal was correctly exhibiting a yellow light"; and that "the block regulations authorised him (the Harrow signalman) to accept the express provided the visibility in the neighbourhood of the box suffices." (That at the distant signal was not relevant. No doubt conditions were better towards Harrow than at that signal.)

The signalman stated in evidence that the express appeared out of the mist, its speed 'far in excess' of previous expresses, and that he thought it was under steam, and was making no attempt to stop, and so on. Consider how the engine of the up express was found: regulator closed, blower one turn on, reversing gear 60 per cent forward, and the brake fully applied.

Was the possibility considered of the Harrow up fast

distant failing to show a yellow light, though the repeat indication in Harrow Box was that a yellow light was being correctly exhibited? Such a failure occurred in the Weedon up colour light distant on November 25, 1952, when no yellow light was showing in either main or auxiliary aspects, though the indication in the box was that the main aspect was correctly exhibiting a yellow light.

Colour light distant, because of their supposed infallibility, are not "fogged" as are semaphore distant in foggy weather; and a similar failure of a colour light distant could be very misleading to the most experienced driver. Had the Harrow up fast distant failed in like manner on October 8, 1952, conditions at that signal would have been relevant in considering the probable cause of driver Jones failing to see and act on such a signal.

An engineman of driver Jones' admitted standard, would certainly have not been working a class "8P" Pacific at 60 per cent forward gear on a falling gradient with steam on, as the signalman's evidence suggests. On the contrary, details of how the engine was found suggest that he had realised, too late perhaps, that he may have missed the distant signal, had opened the blower valve, closed the regulator, then dropped the reversing gear down to 60 per cent forward gear. He would certainly not have carried out these operations so methodically had he been travelling under steam and not seen the Tring local in Harrow platform until the last moment, as some evidence suggests.

Yours faithfully,

CURIOUS

August 7

SIR,—I have read with interest the theory of your correspondent, T. Lawrence, in your issue of August 7. His reasoning on the passing of the distant signal at danger I cannot understand, as this does not entail a breach of regulations.

The point that has not been raised by anyone, not even the Inspecting Officer, is the practice of allowing a train to pass the signal box before Harrow (Hatch End?) when the next section is not clear right through.

Much has been made of A.T.C. being a major factor in the magnificent safety record of the old G.W.R., but I think another big factor was the provision of as many safeguards against the possibility of human failure as was practicable. It was G.W.R. practice to ensure at least two clear block sections in front of any fast train, and had the Perth train been checked similarly, no matter what untoward events occurred on the footplate, the margin of time and distance would have allowed the driver to have stopped his train in time.

My ex-G.W.R. footplate friends tell me that the old G.W.R. vacuum brake is much more sensitive than the L.M.S. type, which is more of the all-or-nothing action, because, I believe, of the particular type of retaining valve fitted by Swindon.

If this is so, it may have the effect of encouraging L.M.S. drivers to delay any heavy brake application to the very last, as in the last-minute jerk on the Perth train.

I am not implying recklessness on the part of footplate men; but the slow adoption of A.T.C. by other Regions has been the question of inferior brake power compared with the G.W.R. pattern, as well as the problem of cost.

Yours faithfully,

A. W. RUSSELL

Oak Cottage, Oaken, Wolverhampton

NORTHERN ALUMINIUM COMPANY: CHANGE OF ADDRESS.—The Northern Aluminium Co. Ltd. announces that from August 24, the address of its Newcastle area sales office will be: Groat House, Collingwood Street, Newcastle-upon-Tyne, 1. Telephone: Newcastle 208789. Telegrams: Noraluco Newcastle-upon-Tyne.

THE SCRAP HEAP

Three Shillings Outwards, 25s. Back

The high charges made on the Continent for registering baggage are pointed out by a correspondent. Referring to the 2s. charged in London for registering two suitcases weighing 132 lb. to Paris (see the Scrap Heap for August 7) and the 1s. which he paid for one 50-lb. suitcase to Switzerland, he states that to register the latter on from a Swiss station to one in Northern Italy would have cost 7—8s.

On his return journey three suitcases totalling 97 lb. cost lire 2,220, or just over £1 5s. to register from the Italian station to London, against, say, 3s. in the reverse direction.

Atomotive

Mr. Gordon Dean, a former Chairman of the Atomic Energy Commission in the U.S.A., has predicted that at least 10 per cent of all new electric generating facilities built in the United States in 1963 might be using nuclear fuel. The percentage in some other countries, such as Belgium, where coal is expensive, might even be higher, and ultimately would certainly be higher. Mr. Dean said he believed an atomic-powered locomotive would be practical within the next decade, but he felt that an atomic motor car was "out of the question, probably for ever."

Journey's End

The photograph reproduced below of a sleeping car of the Cie. Internationale des Wagons-Lits in a siding at Sirkeci Station, Istanbul, was sent us by Mr. A. Earle Edwards, District Superintendent, British Railways, Southern Region, Orpington. The car had worked through from Paris in the "Simplon-Orient Express."

The Paris-Istanbul vehicles are

worked once a week through Bulgaria, via Sofia, and twice weekly through Greek territory, via Salonica; the latter route rejoins the former, which passes for a short distance through Greek territory, at Pithion; it takes some 12 hr. longer in either direction. The distance from Paris to Istanbul via Lausanne, Milan, Trieste, Belgrade, and Sofia is given by the Wagons-Lits Company Guide as 1,960 miles, and 285 miles longer via Salonica.

G.N.R.(I.)

Why is the Great Northern Railway (Ireland) so called? The title presupposes that the trains which go up north never come back, with fabulous accumulations of rolling-stock piling up for the last century in special yards in Belfast. It is surely as much the Great Southern Railway as the Great Northern? . . .

Here is my worry, briefly: Are we wise in paying nearly five million for the G.N.R. if, in perhaps 50 years, it won't have any people or goods to carry?

Still, I suppose, we could repeat the New Zealand butter miracle, and import people and goods to keep the G.N.R. going. Never lose faith in statesmanship!—*Myles na Gopaleen in "The Irish Times."*

Half-Portion

Surely it must have been a committee that made the important decisions to be found on the back of the menu card in restaurant cars. . . . A passenger may while away the time waiting for his lunch by wondering what the choice was with which he would have been faced had he been expecting breakfast. The compilers of the card have worked up an engaging mystery by offering, with-

out further explanation, a breakfast in big red letters at 5s. 6d. and, in little, shamefaced, black letters, a "plain" breakfast at 3s. The committee, no doubt, fixed this balance of tariffs, but its masterpiece is to have decided that children, travelling at half-price, shall be charged half-price for table d'hôte meals—*afternoon tea excepted.*

The members were surely family men and they must have reached unanimity without debate on the folly of offering hot teacake, bread, butter, and jam, cakes and chocolate biscuits to boys and girls of ten at half-price.

But what came over them when they made their gesture of generosity over lunch? Were they awed by their own nerve in charging 7s. 6d. for a meal that, from the point of view of their customers, is always a gambling chance? Grown-ups, however fiercely they may write letters of complaint when they get home, meekly take what is put before them in the restaurant car. But children, having seen less of the world, are hopeful gourmands at every meal.—*From "The Times."*

Rush Hour

Once more unto the by-pass, then
To catch the crowded 152,
Or, better still, maybe, to board
A less congested 72.

For then, with luck, I shall survive,
Unscathed, the ever-present risk
Of stamped-on toes and busted ribs
And an occasional slipped disc.

Bus perils past, I may arrive
Intact, to start my trip to Town
From the accustomed rendez-vous
Of all who travel up and down.

There I can study, at my ease,
The antics of humanity,
The 'hither-thither' types and those
Less prone to fallibility.

New every morning is the choice—
The crowded "fast"? The roomier
"slow"?
The platform porter says his piece,
The maelstrom eddies to and fro.

The stationmaster, artful soul.
Personifies evasive tact
And, in some unobtrusive lair,
Puts on a splendid ostrich act.

Collectors calmly view the scene,
Conscious that time, still marching
on,
Will be the final arbiter
And settle every pro and con.

The many ups and down of life
All find their level in time's hand,
Even the 'rush hour' passes by
And leaves no trace upon the sand.

A. B.

D 2

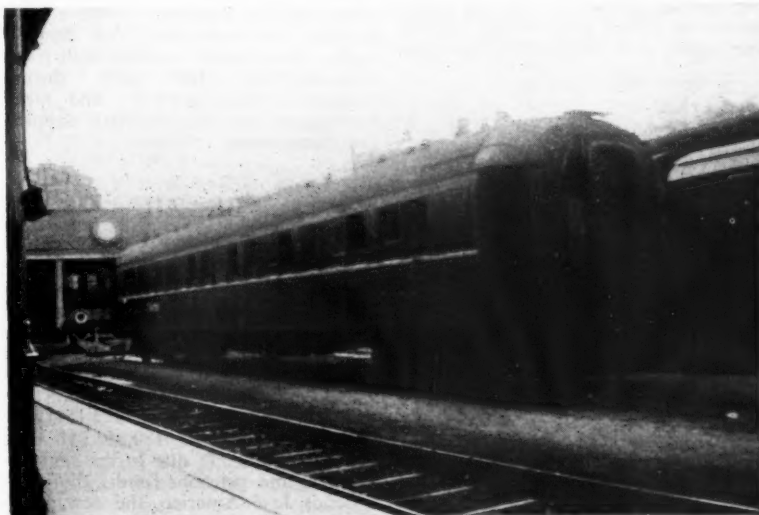


Photo)
Sleeping car of the Cie. Internationale des Wagons-Lits in a siding at Sirkeci Station, Istanbul, after a 2,000-mile journey from Paris in the "Simplon-Orient Express"

[A. Earle Edwards]

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

INDIA

Change in Designations

To ensure uniformity on all railways the designations of the following officers of the Central Railway were changed as shown on June 1:—

Former designation	New designation
Chief Transportation Superintendent	Chief Operating Superintendent
Chief Traffic Manager	Chief Commercial Superintendent
Divisional Traffic Manager	Divisional Commercial Superintendent
Principal Medical and Health Officer	Chief Medical Officer

CANADA

Rail-Road Freight Service

The extension of railway-road freight service between Montreal and Hamilton has been announced. The initial operation was introduced by the C.N.R. between Montreal and Toronto last December.

Twelve additional trailers have been purchased for use in the extended overnight merchandise freight service. They are 22 ft. long and each has a 12-ton capacity. Six additional flat wagons have been specially equipped to transport trailers between railway terminals.

Diesel Wheel-Truing Machine

A new device in operation at the Canadian Pacific Railway diesel servicing shop at Nelson, British Columbia, is a diesel wheel-truing machine, enabling diesel locomotive wheels to be machined without removing either the wheels or bogies from under the locomotive. It will be used in the servicing of diesel locomotives operating in the Kootenay-Kettle Valley divisions of the company, between Crow's Nest and Ruby Creek, British Columbia.

The new machine restores by means of specially designed milling cutters, the

normal contour of the tread and flange of wheels worn by operation of locomotives over frequent sharp curves in mountainous country. It is a floating milling machine suspended from a universal joint designed to machine both wheels on the axle simultaneously.

Four pairs of wheels on a diesel locomotive unit can be reconditioned by this method and the machine prepared for the next unit in an 8-hour shift. All movements are controlled from electric push button control panels on each side of the machine.

UNITED STATES

Philadelphia Suburban Service

From the beginning of July the Pennsylvania Railroad has considerably increased its multiple-unit suburban electric train service between Philadelphia and Paoli, on the main line to Pittsburgh, and over the Philadelphia-West Chester branch. On the former, the service of 73 daily trains between Philadelphia and Bryn Mawr, 10½ miles, has been increased from 73 to 92, and between Bryn Mawr and Paoli 20 miles out, from 73 to 80. In non-rush hours the frequency between Philadelphia and Bryn Mawr is increased from two to three trains each hour, and a number of the suburban trains are now express over this section.

These improvements are the result of the investigation by an outside firm of consultants into the passenger traffic problem of the railway. Over a long past period, the tendency has been to reduce suburban passenger facilities, because of reduced demand. Today, however, because the increased cost of running private motor cars, traffic congestion, and the lack of city parking space, the tide is setting towards the railway once again, and on these Philadelphia

suburban routes the Pennsylvania has no effective competition from other carriers. Parking facilities for cars are being provided at some suburban stations, and reduced fare tickets have been introduced. At Media and Bryn Mawr track and other alterations and improvements needed for the increased services are being effected.

Carriage of Mails

The railways have applied to the Interstate Commerce Commission for a substantial increase in the payment that they receive for carrying United States mail. The present rates were fixed by the I.C.C. in November, 1951, and the railways argue that since then costs have continued to rise to such an extent that in 1952 they incurred a total loss of over \$131 million in handling the mails. In that year the mail revenues totalled \$319 million, but it cost the railways over \$450 million to provide the service.

The request is not only for a minimum increase of 45 per cent, but for an increase as much greater than this as the data to be produced by the railways may show them to be entitled to receive. It is also asked that the increase be made effective from the date, June 26, on which the application was filed. This was one day after the Postmaster General had sent Congress a series of proposals, including a one-cent increase in the charge for non-local first-delivery mail, aimed at reducing the Federal Post Office Department losses by over \$240 million annually.

Railway Pay Demands

When the present moratorium expires on October 31, the Brotherhood of Railway Trainmen is stated to intend to lodge a series of demands on behalf of its members; these are to include time-and-a-half for Sunday work; three weeks' holiday with pay; time-and-a-half for work during assigned holiday periods; and more free passes and free Pullman sleeping car reservations.

BRAZIL

Central Railway Finances

According to an official statement, one of the Central Railway's greatest difficulties has arisen from its inability to pay suppliers promptly, with the result that higher prices are charged to compensate delays. Debts outstanding since March, 1952, amount to 613,707,540 cruzeiros (£12,274,151), excluding the sum of 180,853,141 cruzeiros (£3,617,063), due to the staff retirement and pensions fund.

Senhor José Americo, the new Minister of Communications & Public Works, after consultation with the Finance Minister, has drawn up a scheme to remedy this situation. In

Diesel Traction in Ceylon



Brush Bagnall 1,000 h.p. diesel-electric locomotive of the Ceylon Government Railway at Pattipola, 6,200 ft. above sea level

accordance with the plan, approved by President Vargas, the Central Railway will receive from the Treasury, in monthly instalments to December 31, a total sum of 640,000,000 cruzeiros (£12,800,000), of which 220,000,000 will be used to pay part of the outstanding debts, and 420,000,000 will be used to cover the 1953 deficit and carry out work already planned.

The sum of 54,000,000 cruzeiros has been allotted to pay for locomotives and other materials, acquired abroad. The railway's account with the Bank of Brazil will be increased this year by 80,000,000 cruzeiros, to 1,200 million (£24,000,000).

Imports

During the first five months of 1953 diesel locomotives valued at U.S. \$5,231,467 were shipped from the U.S.A. For the second half of this year only U.S. \$100,000,000 will be available for purchase of general merchandise in the dollar zone, after providing for imports of petroleum products and newsprint and payment of government services.

During the first four months of 1953 United Kingdom exports to Brazil included locomotives and wagons valued at £214,559; wheels and axles, £23,684. By the end of April the following licences had been granted for imports from Great Britain: unspecified railway materials, £22,677; signalling equipment, £65,000; diesel engines and accessories, £36,748.

Several of the permits referred to compensation deals, which were later suspended. In July, however, a

three-month extension was granted to complete transactions previously authorised. Although there are many objections to this form of trade, British exporters benefited considerably by it last year.

Between January and March Brazilian imports from all sources included the following: accessories for locomotives, £184,880; accessories for wagons, £7,520; locomotives, £92,800; diesel engines, £505,220; and rails and accessories, £118,760.

PORTUGAL

Electrification

The Portuguese Government has approved a scheme for economic development of Portugal and Portuguese possessions overseas. Within the framework of the development plans for Portugal, on which total expenditure amounts to escudos 13,500 million, an expenditure of escudos 600 million has been earmarked for electrification of the Lisbon-Sintra suburban line and of the Lisbon-Oporto line as far as Entroncamento. Editorial reference to these projects was made in our issue of June 19.

FRANCE

Measuring Track Stress

By means of a specially designed vehicle known as a *wagon dérailleur*, or derailler coach, the S.N.C.F. is able to measure the stress exerted on rails by various loads at different speeds, and can also measure the deformation of

track caused by differing loads and speeds.

A two-axle luggage van has been specially equipped with a third axle, midway between the others, on which stresses may be put by means of equipment in the van. In this way, the stress required to derail an axle can be measured, as the centre axle may be derailed without affecting the safety of the van.

In addition, the operation of this van over track on which a measuring device known as a *ripametre* has been installed enables the amount of deformation of the track caused by passage over it of varying loads at differing speeds to be measured.

New Cableways

What is claimed to be the highest cableway in the world is being constructed from Chamonix, 3,445 ft. above sea level, to the Aiguille du Midi, 12,605 ft. The rise of 9,160 ft. will be covered in less than half an hour. A 190-ft. pylon at the base has been erected and the departure station there is almost completed.

In the Pyrenees a cableway, claimed to be the longest in Europe, has been completed from the winter sports resort of Mongie to the Pic du Midi de Bigorre at a height of 9,350 ft. The cableway has a span of 14,750 ft. and rises nearly 3,650 ft. The installation has been constructed principally to serve a meteorological observatory at the summit, but it may also be used by tourists and winter sports enthusiasts. Two cars, each accommodating 30 persons, are provided.

Publications Received

Photo-electric and Electronic Controls.

—Various applications of photo-electric cells in industry are represented in an illustrated folder issued by Radiovisor (Parent) Limited, 1, Stanhope Street, London, N.W.1. Among them are the detection of oil or gas flame failure, automatic lighting control, bunker level control and indication, and protection for operators of presses and other machinery. Various standard items of equipment for these and other purposes are illustrated but the company has facilities in its Research & Development Department to design similar controls and safeguards for the varied purposes that arise in all branches of industrial activity.

A.B.C. Coach Guide: Summer, 1953, Issue.—The Summer issue of the *A.B.C. Coach Guide* contains information current until September 30. New routes in Devon and Cornwall and in East Anglia are included, as well as additional journeys on many other routes. More of the tables of principal bus services have been improved, and the route map at the end of the guide has been brought up to date. A new feature is an editorial page drawing attention to new services and other facilities introduced.

Many additional establishments are now included in the section dealing with coach party catering. As in previous editions, the guide contains also popular sections on coach cruises, and historic houses and castles. It is on sale at the offices of bus and coach companies; or direct from Index Publishers Limited, 69, Victoria Street, London, S.W.1. The price is 3s. (3s. 6d. post free).

Aluminium in Transport (Aluminium im Verkehr). Düsseldorf: Aluminium-Verlags G.m.b.H., for the Aluminium-Zentrale e.V. Düsseldorf. 11½ in. × 8½ in. 210 pp. Fully illustrated. No price stated.—Railway applications of aluminium described in this collection of illustrated articles include different types of wagons by German builders; Metropolitan-Cammell rolling stock for London Transport; the A.C.F. Talgo train for the Spanish National Railways; Uerdingen railbuses; various types of passenger and freight vehicles in the U.S.A.; wagons for special traffic by French builders for the French National Railways and private owners in France, also for railways in the French Union overseas; and ticket offices, barriers, and other passenger station equipment in Germany. There are essays on aluminium in the construction of wheels for railed vehicles

and in that of a lightweight articulated diesel train, and on its uses in passenger vehicle bodies, also on aluminium foil as a heat insulator in locomotive boilers and rolling stock. Some of the articles are signed by leading German mechanical engineers. Among other forms of transport covered are cable railways and various kinds of road freight vehicle. An article outlines the uses of the metal in diesel engines. A short account is given of the activities of the Aluminium Zentrale, Düsseldorf.

Layrub Propeller Shafts.—A technical publication, "Layrub Propeller Shafts," has recently been issued by the Laycock Engineering Co. Ltd. in which are given salient features of a comprehensive range of Layrub couplings together with technical data in sufficient detail to enable a designer provisionally to select the coupling most suited to his needs. The book is illustrated with typical applications and includes diagrams in colour, showing how the resilient rubber block responds to angular, torsional, and axial movement. Dimension, load, and weight charts of the Two-four series of Layrub flexible couplings are given in table form, as are also torque, resilience, and end thrust. Similar information is included on the Three-six, Three-three, and Six-six series.

New Diesel Locomotive Erecting Shop

*Extension to the Castle Engine Works
of W. G. Bagnall Limited, Stafford*

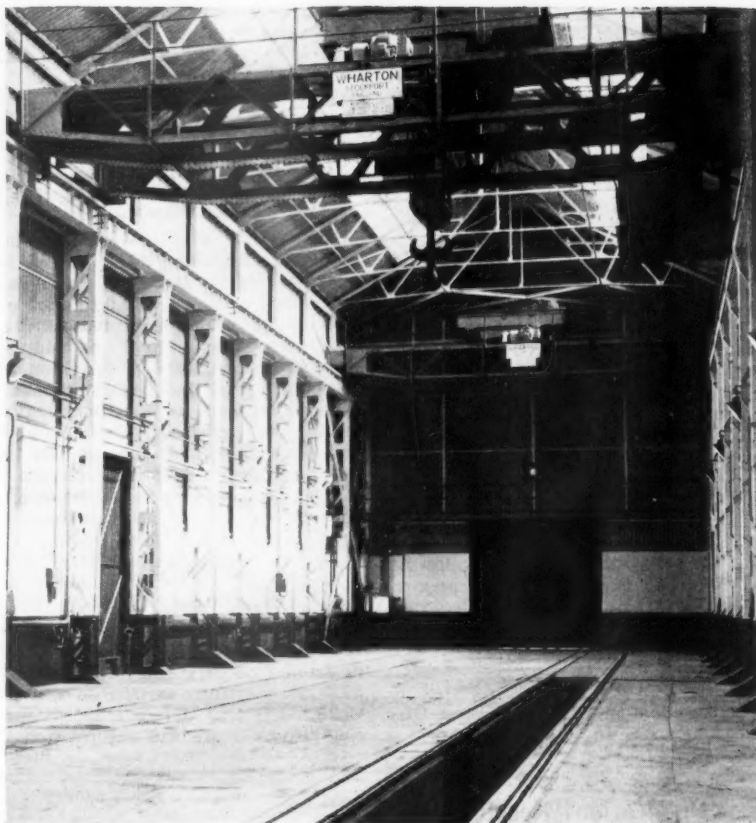
FOR the past 80 years W. G. Bagnall Limited, Stafford, has designed and built locomotives for many of the world's railways. To cater for the increasing orders for diesel-electric and diesel-mechanical locomotives, the firm has recently built a new erecting shop. The original erecting shop will continue to build steam locomotives.

The new shop will undertake the erection of diesel-mechanical locomotives designed by the firm, and diesel-electric locomotives designed by Brush-Bagnall Traction Limited. Under construction at present are the remaining underframes and bogies of the order for 25 main-line diesel-electric locomotives for the Ceylon Government Railway; the locomotives were described and illustrated in the January, 1953, issue of our associated journal *Diesel Railway Traction*.

These will be followed by seven 0-4-0, and three Bo-Bo diesel-electric shunting engines for the Steel Company of Wales Limited, and two 0-6-0 diesel-electric locomotives for the National Coal Board. The 0-4-0 and 0-6-0 locomotives will be completely erected, and the underframes and bogies of the Bo-Bo locomotives will be fabricated and sent to the Brush Electrical works at Loughborough for final erection.

Construction of Shop

The new shop is of heavy steel construction carried on continuous reinforced concrete foundations, and measures 175 ft. by 43 ft. and is 40 ft. high at the eaves. Brick walls are carried up to a height of 11 ft. from floor level; the remainder of the building is sheeted with corrugated asbestos. Two tracks run the full length of the shop and are set flush in the granolithic floor. One track is of mixed gauge and provides for the building of locomotives for the 5 ft. 6 in., 4 ft. 8½ in., 3 ft. 6 in., and metre-gauge lines.



*Interior of the new diesel locomotive erecting shop built by
W. G. Bagnall Limited at the Castle Engine Works, Stafford*

Two electrically-operated 50-ton capacity cranes are installed and should be capable of lifting the heaviest locomotives. The crane rails are 30 ft. from floor level and will permit of lifting locomotives one over the other if neces-

sary; the cranes were supplied by Wharton Crane & Hoist Limited, Stockport. Concurrently the firm is also installing new machine tools and other equipment to meet production requirements.

FINAL IRON & STEEL CORPORATION MEETING.—The Iron & Steel Corporation of Great Britain, at a final meeting on August 13, approved its final accounts and submitted them to the Minister of Supply. With the submission of these accounts the Corporation fulfilled its last function and on August 13, 1953, under the provisions of the Iron & Steel Act 1953, the Corporation ceased to exist. Production in the first half of 1953 reached a new record, but group profit figures are not available as the companies have not been required to make up their accounts to the end of the Corporation accounting period. The accounts now published cover the period October 1, 1952, to July 12, 1953. As required by the 1953 Act, the present accounts are concerned solely with the Corporation's finances; they do not relate to the trading, nor do they reflect the results of the activities of the publicly-

owner companies since September 30, 1952. Income of the Corporation for the period, amounting to £4,192,379, represents dividends received on share capital of the Corporation's subsidiary companies together with interest on loan capital accruing during the period. The unappropriated surplus at July 12, 1953, was £720,989.

HEAVY TRAFFIC ON BRITISH RAILWAYS.—Heavy passenger traffic was again handled by British Railways last Saturday when over 230,000 passengers left the principal London termini in 570 long-distance trains, compared with 228,000 passengers in 563 trains on the corresponding day last year. Nearly 13,000 passengers travelled by the 35 "Starlight Specials" between London and Scotland last Friday and Saturday. Clearances of deep-mined and opencast coal up to 6 a.m. on August 17 amounted

to 2,701,460 tons, including 304,040 tons carried at the week-end. During the week ended August 8 a total of 147,195 tons of iron and steel from the principal steel works and 306,000 tons of iron ore was conveyed.

NEW GOODS DEPOT AT HUSKISSON, LIVERPOOL.—Good progress is being made in the construction of the new £200,000 goods depot at Huskisson, Liverpool, London Midland Region. The scheme, which involves a shed 450 ft. x 135 ft. and the installation of an electric conveyor for dealing with traffic between rail wagons and road motors, will make Huskisson one of the most modern goods depots in the country. It is anticipated that the shed structure will be finished by the end of this year, after which work will be put in hand on the conveyor and interior equipment.

An Anti-Vibration Nut

Providing full thread contact, and suitable for railway permanent way fastenings and rolling stock

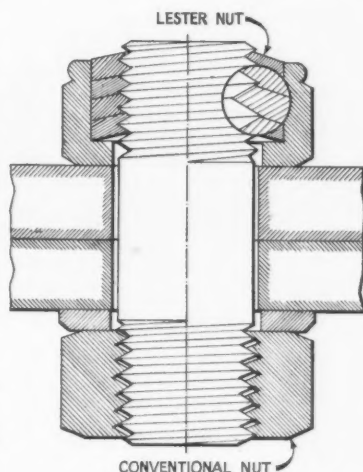
MANY devices have been evolved to produce a nut which remains tight during vibration with a view to avoiding the necessity of periodical checking, particularly on permanent way fishplates, points and crossings, locomotives, and rolling stock, and also in the heavy and light engineering industries. It is claimed that the Lester anti-vibration nut, manufactured by the Lester Lock Nut & Washer Co. Ltd., meets these conditions, and that extensive tests already carried out on railway permanent way over a period of several years fully substantiate this claim.

A feature of the nut is its method of manufacture, which consists of a number of conical discs with serrated edges firmly assembled in a hexagon body to the size of nut required and then drilled and tapped. It is free running when first screwed on to the bolt, but on tightening the nut against the work, the conical discs tend to flatten, until the threads cut in them contact at considerable pressure both flanks of the thread on the bolt.

Stress Distribution

The thread contact of the Lester nut compared to that of the conventional type is shown in the accompanying illustration. The radial, bending, and tangential stresses are uniformly distributed, and vibration transmitted through the elastic nut and periphery of the coned discs is considerably reduced before reaching the fully supported bolt threads.

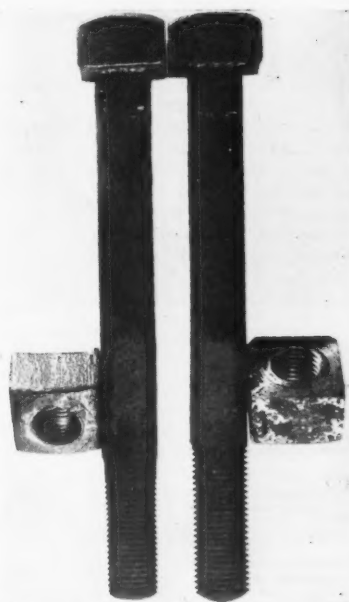
Vibration thereafter automatically gives the effect of the initial tightening of the nut by further increasing the pressure of the cone elements on the threads of the bolt in proportion to



Thread engagement of the Lester nut compared with that of the nut of the conventional type

the intensity of vibration present in the assembly. This feature ensures that the grip of the nut exceeds its unscrewing tendency during vibration.

A further feature of the Lester nut is its ability to be unscrewed without damage and the fact that it dispenses with washers. Three types are available, light, standard, and heavy, to suit all grades of bolts and studs. Special nuts are also made for elevated temperatures up to 700° C., and for electrical applications. The various types are made to equal in strength the fluctuating tensile stresses of which the bolts are capable; they are not intended to equal the breaking strength of bolts.



The left hand bolt was fitted with a standard nut; that on the right was fitted with a Lester nut

It is stated that since first being used on a section of the permanent way for trial purposes in 1949, the nuts are estimated to have carried some 36 million tons of traffic at speeds of 40-45 m.p.h., without requiring retightening. The results of another test are shown in the accompanying illustration. Both bolts are identical and have been in service an equal period in a railway crossing.

CANTEEN EXTENSION AT WATERLOO.—The staff canteen extension at Waterloo was officially opened by Mr. C. P. Hopkins, Chief Regional Officer, Southern Region, on August 4 in the presence of a representative gathering of officers and staff. The canteen, with a seating capacity for 140, is open 24 hours a day, seven days a week. Besides main meals quoted, the sales of snacks and beverages are considerable.

NEW L.T.E. GARAGE AT ROMFORD.—On August 12 a new garage at Romford (North Street) was brought into use by the London Transport Executive. The building, on a 2-acre site, provides accommodation for the parking and day-to-day maintenance of 115 buses of the Central Road Services fleet. A single-span steel truss and asbestos-cement roof covers the parking area, measuring some 285 x 120 ft. Over the remaining accommodation a roof of flat pre-cast concrete units, covered with vermiculite insulation and asphalt is provided. The building itself is of steel-

frame construction with brick facings. Vacuum-cleaning, refuelling and automatic washing plant is installed, and the five pits, adjacent to the engineering shops and stores, have compressed air supply and fluorescent lighting. In the pit area an extractor fan draws off exhaust fumes so that engines can be run without contaminating the atmosphere. The operating and welfare block at the garage contains offices, a canteen, and a recreation room.

HACKBRIDGE & HEWITT ELECTRIC CO. LTD.—Mr. Thomas F. Lister, Chairman and Managing Director of the Hackbridge & Hewitt Electric Co. Ltd., presided on August 7 at the company's annual general meeting. His statement, circulated with the report and accounts, showed that trading profits were well maintained at £459,351, compared with £464,737 in the preceding year. A final dividend of 15 per cent, making 20 per cent for the year, was recommended, and approved by the meeting. The transfer of £75,000 to general reserve has raised this fund to

the substantial figure of £400,000. The Chairman reported a maintained demand for the company's glass bulb rectifiers, for which their order book was the largest in their history. Orders for rectifiers placed with their Canadian subsidiary amounted to \$1,400,000 and included contracts with the U.S.A. Now that they were able to promise better delivery dates for transformers, they expected to derive their share of this business in Canada, arising from large expansion programmes for hydro-electric development.

GENERAL ELECTRIC CO. LTD.—A final dividend of 7½ per cent has been recommended by the board of the General Electric Co. Ltd., making a distribution of 11½ per cent for the year to March 31. Aggregate profits of the group declined from £6,603,957 to £4,230,234, but £2,827,033 net profit relating to previous years has been brought into the profit and loss account, of which £2,420,172 arose from settlement of the group's liability to excess profits tax.

Freight Locomotive Design in America—1

Locomotives of the 2-8-4 type have been extensively used on the railways of the United States and have comparatively recently been introduced on the South African Railways

By E. C. Poultney, O.B.E.

THE 2-8-4 type of locomotive for general freight service was first built experimentally by the Lima Locomotive Works, Lima, Ohio, in 1925 and directly after completion was delivered to the New York Central (Boston & Albany) for trial purposes, during the course of which it clearly demonstrated its superiority over engines of

ing truck for the 2-8-4 in place of the two-wheel pattern for the Mikado. So far as tractive force is concerned, both types are limited by the allowable weights which may be placed on four coupled axles, so that the rated tractive force of the two types would not be expected to be greatly different.

The substitution of a four-wheel trail-

dimensions of the 2-8-4 designs forming the subject of this article are given in Table 1, and Table 2 has been prepared to show how the fitting of a trailing four-wheel truck affects the weight proportions of the engine and how boiler power is augmented.

Referring to Table 1, it will be noted that this includes the leading dimensions

TABLE 1.—PRINCIPAL DIMENSIONS OF 2-8-4 TYPE LOCOMOTIVES

Builder Figure No. Railway	Lima 1 C. & I.M.R.	Lima 2 Lima Loco. Works, Experimental	Lima 3 B. & A.	Lima 4 Erie	Baldwin 5 A.T. & S.F.	Baldwin 6 L. & N.	American Loco. 7 P. & L.E.	Lima 8 N.Y.C. & St. L.
Type	2-8-2	2-8-4	2-8-4	2-8-4	2-8-4	2-8-4	2-8-4	2-8-4
Cylinder, dia. and stroke, in.	26 by 30	28 by 30	28 by 30	28½ by 32	27 by 32	25 by 32	26 by 32	25 by 34
Driving wheels, dia., in.	63	63	63	70	63	69	63	69
Boiler—								
Working steam pressure, lb. per sq. in.	200	240	240	250	220	265	230	245
Tubes, no. and dia. outs., in.	190-2½	90-2½	78-2½	50-2½	226-2½	62-2½	55-2½	73-2½
Flues	45-5½	204-3½	204-3½	242-3½	50-5½	202-3½	177-4	202-3½
Length, ft.	18	20	20	21	20-9	19	18	19
Heating surface, sq. ft.—								
Tubes and flues	3,164	4,773	4,632	5,249	4,239	4,191	3,898	4,311
Firebox, total	338 ^a	337	433 ^a	448 ^a	338	463-3 ^a	394	461 ^a
Evaporators, total	3,502	5,110	5,065	5,697	4,577	4,654-3	4,292	4,772
Superheater	940 ^a	2,111 ^a	2,111 ^a	2,545 ^a	1,246 ^a	1,908 ^a	1,877 ^a	1,932 ^a
Combined	4,442	7,221	7,176	8,242	5,823	6,562-3	6,169	6,704
Grate area, sq. ft.	66-7	100	100	100	99	90-2	90-3	90-3
Wheel base, ft. in.								
Driving	16-9	16-6	16-6	18-3	16-6	18-3	16-9	18-3
Engine	36-11	41-8	40-2	44-0	37-2	42-4	41-2	42-0
Engine and tender	76-1	82-6	82-8	91-6½	81-7½	93-5	95-5½	87-8½
Weight, lb.								
On drivers	226,000	248,200	252,200	286,500	268,200	268,200	280,000	266,030
Engine	305,000	396,100	396,100	468,800	396,500	447,200	426,000	444,290
Engine and tender	514,300	660,000	691,580	846,800	681,600	750,200	778,780	733,130
Tender capacity—								
Coal, tons (2,000 lb.)	16	18	21	28	20	24	22	22
Water, gallons (US)	12,000	15,000	15,500	20,000	15,000	22,000	20,000	22,000
Rated tractive force, lb. (engine cyls.)	54,600	69,400 ^a	69,400 ^a	72,000 ^a	69,200	65,290	67,130	64,100
Booster, tractive force, lb.	—	13,200	12,000	13,000	13,600	14,100	—	—

NOTES.—¹ Limited cut-off, 60 per cent

² Includes arch tubes and syphons

³ Includes syphons

⁴ Type E superheater

⁵ Type A superheater

the Mikado 2-8-2 type, both in power output and also from the point of view of coal consumption in relation to the powers developed.

The object of the present article is to record the development of the 2-8-4 type of high-power locomotive which has been continuously built for many railways in North America since the date of its introduction in 1925 up to 1949, during which period some 750 have been placed in traffic. It is also of interest to observe that, while the type was built in the first instance by the Lima Locomotive Works in 1925, the last steam locomotive to be built by this firm, turned out in 1949, was also of the same type.

Comparison of Types

In general, the 2-8-4 resembles closely the 2-8-2, formerly very extensively used for general freight services on North American railways, for which some 14,000 have been built. The principal difference between these two types is the use of a four-wheel trail-

ing truck for one of the two-wheel design made the provision of a larger boiler with an increased grate area possible, the resulting added weight and, hence, any increase in boiler proportions and steaming capacity being limited by the weight carrying capabilities of the four-wheel truck compared with the normal two-wheel truck after allowing for the difference in the weight of the two types. The leading

of a Mikado 2-8-2 engine for comparison with similar particulars for examples of the 2-8-4 type. The 2-8-2 represents a number supplied by the Lima Locomotive Works in 1928 to the Chicago & Illinois Midland and, as the proportions of these particular engines correspond very closely with the average for the 2-8-2 type, the design is therefore included for the purposes of comparison with the 2-8-4 engines. The

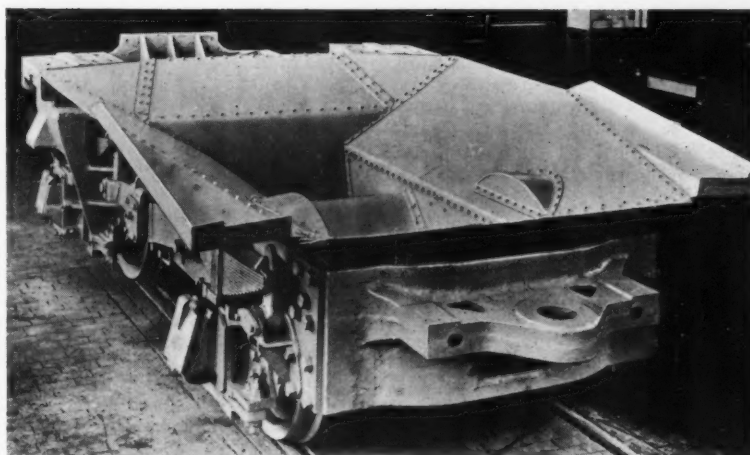
TABLE 2.—COMPARATIVE PROPORTIONS OF 2-8-2 AND 2-8-4 LOCOMOTIVES

No. Railway	1 C. & I.M.	2 B. & A.	6 L. & N.	7 P. & L.E.	8 N.Y.C. & St. L. (N.P.)
Type	2-8-2	2-8-4	2-8-4	2-8-4	2-8-4
Rated tractive force, lb.	54,600	69,400	65,290	67,730	64,100
Engine weight, lb.	305,000	385,000	447,200	426,000	444,290
Weight on drivers, lb.	226,000	248,200	268,200	280,000	266,030
Weight on trailing truck, lb.	55,500	101,300	127,400	108,000	123,220
Trailing truck mean load per axle, lb.	55,500	50,650	63,700	54,000	61,610
Total heating surfaces, sq. ft.	4,442	7,221	6,562	6,169	6,704
Grate area, sq. ft.	66-7	100	90-2	90-3	90-3
Ratios—					
Weight on drivers/engine weight	74-0	64-9	60-1	65-7	60-0
Weight on trailing truck/engine weight	18-2	26-1	28-3	25-3	27-7
Weight on drivers/tractive force	4-14	3-58	4-10	4-17	4-15
Engine weight/total heating surface	69-5	53-4	68-5	69-7	66-3
Heating surface/grate area	67-0	72-2	72-2	68-0	74-0
Rated tractive force/grate area	820	694	721	741	710

locomotives forming the subject of Table 2 have been selected for the purpose of comparison from those shown in Table 1 and include the 2-8-2 engine No. 1.

It will be seen that in Table 2 certain leading particulars of each engine are given and, based on these, a number of ratios have been computed. The basic difference between the 2-8-2 and 2-8-4 types directly due to the use of the four-wheel trailing truck, is the proportion of the engine weight carried on the coupled wheels and on the trailing trucks. These ratios are respectively 74 and 18 per cent for the 2-8-2, and average approximately 62 and 26 per cent for the 2-8-4. The latter value is that which is directly responsible for the larger boilers made possible providing from 35 to 50 per cent more grate area.

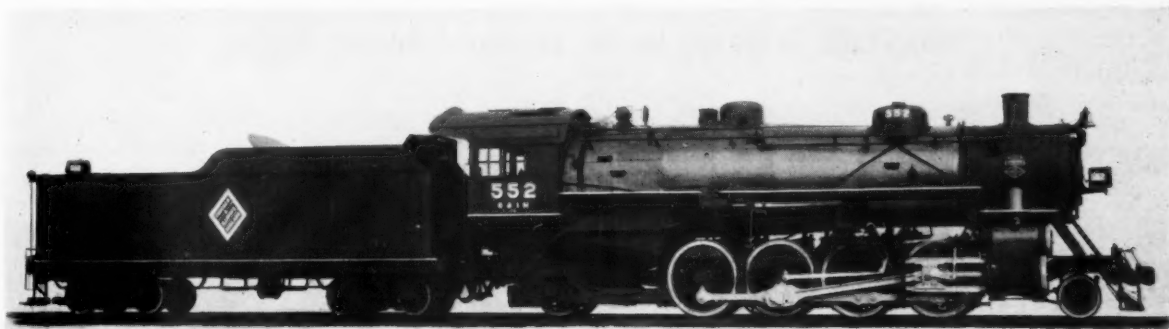
The increase in the size of the boilers for the 2-8-4 adds to the engine weight so that, though a smaller proportion of this is available for adhesion, the adhesive weight/tractive effort ratios show practically equal values. In respect to the larger boilers used for the 2-8-4 compared with the 2-8-2, a point of interest is seen in the engine weight/total heating surface ratio. This expresses the engine weight in pounds required per sq. ft. of total heating sur-



Lima articulated bogie complete with ashpan ready for assembly

8, particularly so far as the main frames are concerned, which for the modern engines are unit steel castings. The factor of adhesion for the Boston & Albany engines has a relatively low value allowed on account of the full gear cut-off being limited to 60 per cent. The effect of the larger grate areas for

1925 are given in the accompanying Table 1, which also includes comparative particulars of six further examples selected to indicate the development of this design between 1925 and 1949. The first four engines are representative of earlier designs, while the last three included show the latest and the last



Chicago & Illinois Midland Railway 2-8-2 locomotive

face, including the superheater, and shows that the 2-8-4 is on the average rather lighter.

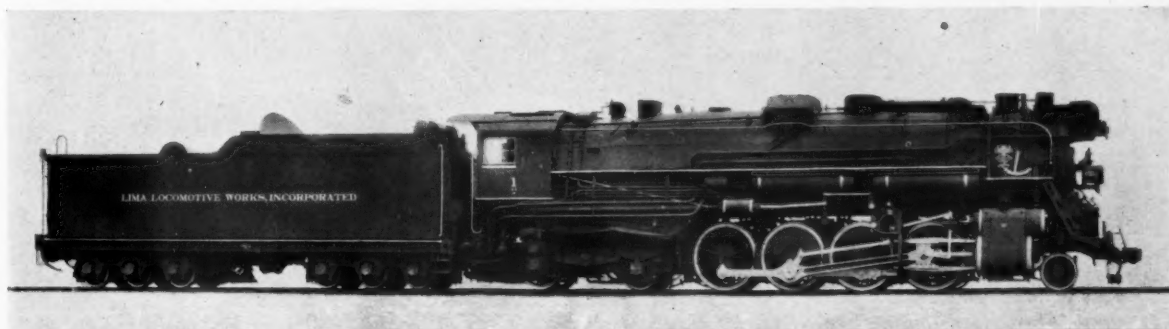
The Boston & Albany engine No. 2, in Table 1, is the original Lima design of which a large number was built. These differ in certain details of construction compared with Nos. 6, 7 and

the 2-8-4 locomotives is clearly shown by the tractive-force/grate area ratios which indicate the increase in power attainable with the 2-8-4 design compared with the 2-8-2.

The leading dimensions of the experimental 2-8-4 as first proposed and built by the Lima Locomotive Works in

constructed for service in the United States.

As already stated, a considerable number of these 2-8-4 engines was placed in traffic over the years mentioned; further, it is of interest to observe that comparatively recently engines of this type have been built in



Lima Locomotive Works "A1" class 2-8-4 experimental locomotive

this country by the North British Locomotive Co. Ltd. for service on the South African Railways 3-ft. 6-in. gauge lines. Mention may also be made that still more recently a number of further engines has been delivered for freight services on the S.A.R., equipped with four-wheel trailing trucks, built by Henschel & Sohn, of the 4-8-4 type. These locomotives were described and illustrated in the May 15, 1953, issue of *The Railway Gazette*.

The Lima locomotive of 1925 and a number subsequently constructed by the same builders, differed from those of the same type turned out by the Baldwin Locomotive Works and the American Locomotive Company in the design and arrangement of the four-wheel trailing truck, for the reason that the latter firms used the Commonwealth design with cast-steel frames, a type ultimately also used by Lima. The original Lima conception embraced a trailing truck of the four-wheel type, articulated with respect to the engine main frames and the tender. The engine frames terminated immediately behind

the rear pair of driving wheels, at which point the trailing truck frame was hinged to the engine frames in a manner similar to that used in the Mallet type of articulation for the leading engine unit.

The buffing and pulling stresses were thus transferred directly through the truck framing and the tender drawbar connected to the rear end of the truck frame. This rather novel arrangement provided considerable flexibility and, in addition to its weight-carrying advantages, permitted a large capacity ashpan since the ashpan was carried on the truck and moved laterally with it. The normal form of cradle framing could not be used with this construction; therefore, the firebox was carried at the front by the engine frames and at the hind end was supported at the two corners, each of which was carried on a combined expansion and self-centring lateral motion bearing. This took the form of a casting which was bolted to the truck side frames and included the axlebox guides for the rear axle.

The illustration on page 209 shows

the truck complete with the ashpan in place ready for assembly to the locomotive. The boiler was of large size, the notable feature being the grate area of 100 sq. ft., larger than had hitherto been used for an eight-coupled locomotive using bituminous coal. The cylinders were steel castings and the 14-in. piston valves were set for a full gear cut-off of 60 per cent.

Features of Design

What was a complete departure from previous practice was made in the arrangement of the connecting and coupling rods, which were designed so that the main crankpins were relieved of part of the piston thrust. This interesting main and coupling rod application was described and illustrated in the February 6, 1931, issue of *The Railway Gazette*. Other features included the type E superheater, feedwater heater, mechanical stoker and the booster applied to the trailing axle of the hind four-wheel truck.

(To be continued)

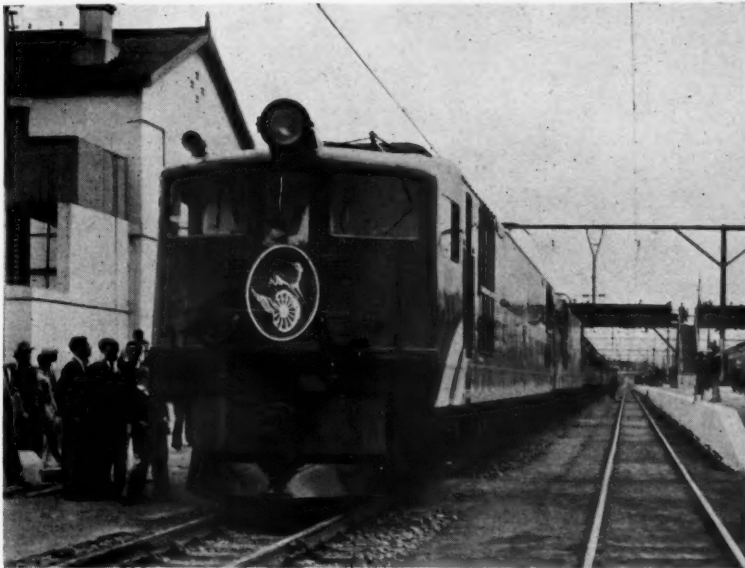
Main-Line Working in the London Midland Region



The down "Red Rose" near Hatch End, Middlesex, hauled by "Patriot" class 4-6-0 type locomotive. This train covers the 193½ miles from Euston to Liverpool Lime Street in 3½ hours non-stop

Cape Western Electrification, South African Railways

*Conversion from Worcester to Touws River
expected to be complete in November*



Inaugural train to Worcester at Wellington Station, headed by two "4E" class locomotives

THE Cape Western main-line electrification of the South African Railways covers the section from Bellville, the previous electrification terminal north of Cape Town, to Touws River, a distance of 149 miles, as well as the alter-

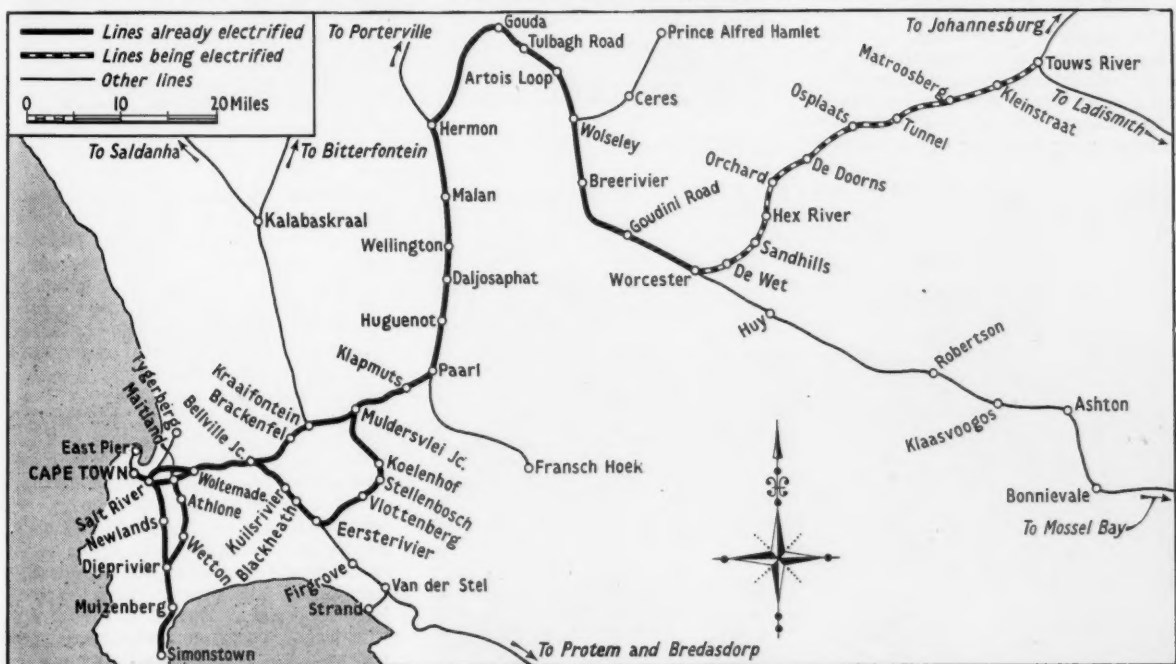
native route to Muldersvlei via Eersterivier and Stellenbosch. The scheme therefore embraces the electrification of 175 route-miles, and 248 track-miles. As a result of the difficult nature of the terrain, the track was approaching

the limits of its carrying capacity, particularly on the section from De Doorns to Matroosberg over the Hex River Mountains, where, for a distance of 16 miles, the gradient offers an almost continuous climb of 1 in 40 uncompensated, with a maximum curvature of 340-ft. radius.

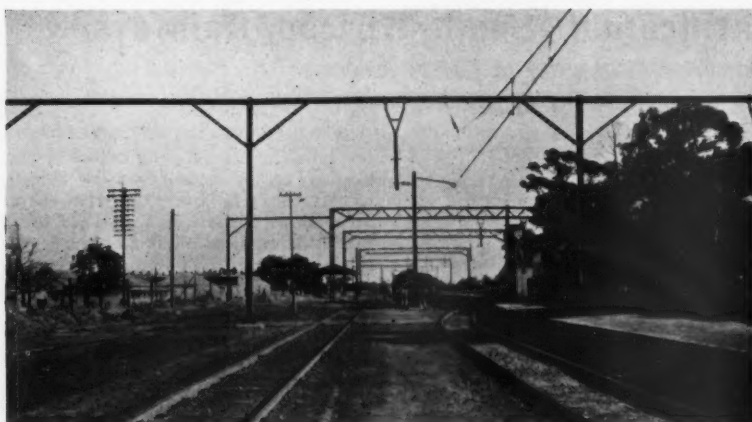
In conformity with the electrified sections in Natal and the Transvaal, the line has been electrified with a contact wire supply of 3,000 V. d.c. The substations are supplied from the Electricity Supply Commission's new network in the Cape Western Province and fed from the new Hex River power station at Worcester. At the present time fast passenger trains take 290 min. to travel from Cape Town to Touws River. Electric traction will reduce the time by 34 min. In the reverse direction there will be a saving of 44 minutes. The time for goods trains will be reduced by about two hours in each direction.

Reasons for Conversion

When opening the Bellville to Worcester section of the main-line electrification scheme to the north on April 8 this year, the Minister of Railways, Mr. P. O. Sauer, said that the railways adopted electric traction for two reasons only. These reasons were, first, that traffic had reached a certain density; or else that steep gradients had to be negotiated. He added that the expansion of agriculture and industry in the



Cape Town—Touws River section of the Cape Western main line, South African Railways. The Cape Town—Bellville—Simonstown lines continue to be operated at 1,500 V. pending delivery of 3,000 V. multiple-unit stock



Overhead equipment at Wolseley Station, Bellville—Worcester section

Western Province and the increasingly heavy traffic between the Cape and the Rand were the main determining factors in this case.

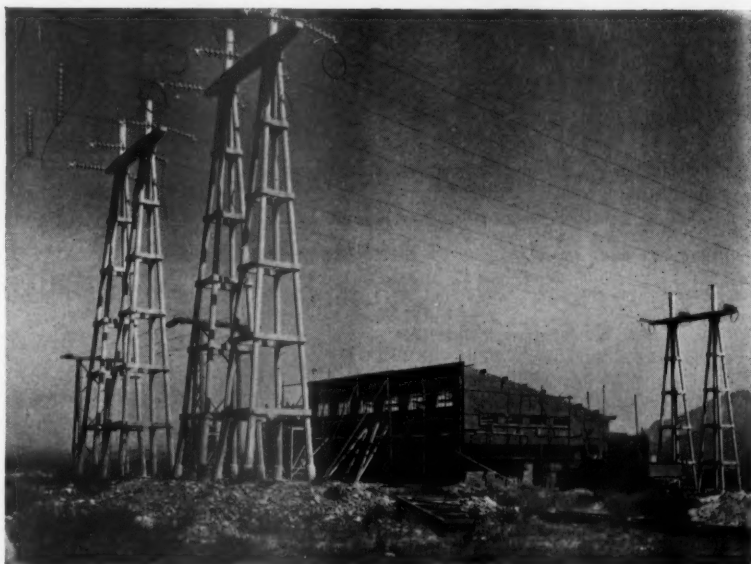
The Minister said that the electrification of the line from Bellville to Touws River would cost £2,679,000. The cost of the electric locomotives used on this section would be £1,290,000, and the total required to complete the whole scheme would not be far short of £5,000,000. When the project was completed, 59 steam locomotives would be replaced by 48 electric units. Goods train loads from Bellville to De Doorns would be increased from 820 tons to 1,000 tons as compared with steam traction, and 430 tons to 680 tons from De Doorns over the Hex River Mountains to Touws River.

Fixed Installations

Eleven traction substations have been constructed. Each contains two air-cooled steel tank 6-phase rectifiers provided with vacuum pump equipment. The rectifiers are of 3,000 kW. continuous rating and were designed with a

liberal overload capacity. One of the rectifiers at each substation is connected to a star-connected main transformer, and the other to a delta-connected transformer, thus ensuring that each substation functions as a 12-phase unit.

Grid control of the rectifiers is provided for arc-suppression purposes only, no voltage regulation being arranged, nor is provision made for inverted operation. Although the scheme permits of full regenerative braking throughout, calculations have indicated that the liberal conductivity of the overhead equipment will permit the absorption of practically all regenerated energy in direct interchange between trains. Reactors and harmonic shunts are provided on all rectifiers in order further to reduce the possibility of interference with communications.



The 66-kV. transmission lines and construction work at Chavasse substation



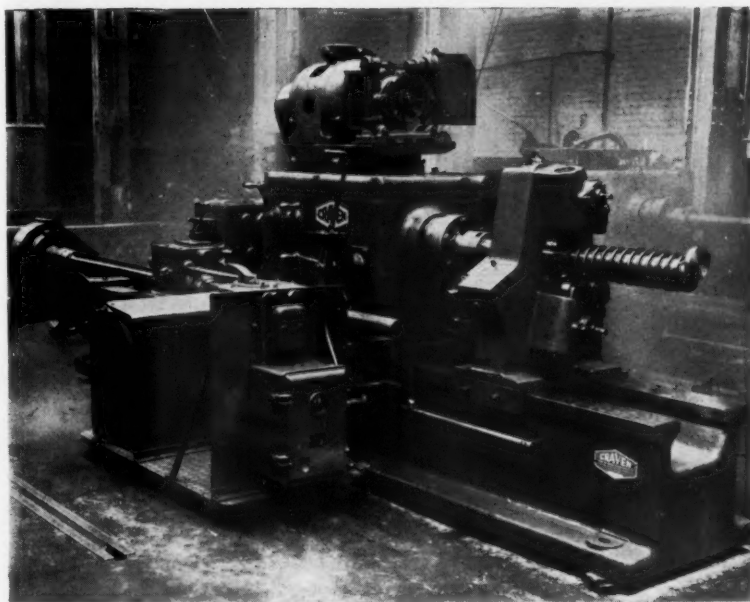
Pouring concrete for mast foundations at Osplaats on the Worcester—Touws River section

All track equipment circuits are protected by high-speed circuit breakers arranged to give protection on rate-of-rise of fault currents as well as maximum overload, and resistance loading banks are provided in order to stabilise the line voltage at points where regeneration is expected to be in excess of train requirements under certain conditions.

Track equipment structures were constructed from broad flange beams and are carried on concrete blocks cast *in situ*. The mast footings are insulated from the foundation group. These structures are highly standardised with a very limited number of types, and are electrically welded throughout. The construction of foundations was completely mechanised, all concrete being poured from a special construction train fitted with large-capacity concrete mixers, no material being distributed along the track. Anchor-points have been provided for the overhead wires at intervals
(Concluded on page 213)

Heavy-Duty Spring Coiling Machine

Equipped with mechanical means of holding the wire to the coiling mandrel



Craven heavy-duty spring coiling machine, showing the travelling platform for operator

JONAS Woodhead & Sons Ltd. has recently taken delivery of two heavy-duty spring coiling machines specially designed and manufactured by Craven Brothers (Manchester) Limited. Of 18-in. centres and robust construction, the machines are equipped with a mechanical device for holding the wire in contact with the coiling mandrel and eliminates much of the manual effort usually associated with the operation.

The spindle of the 16-speed lathe type headstock is provided with a suitable adaptor to which the required mandrel is attached, and a substantial

three-point fixed roller stay is arranged to support the outer end of the mandrel.

The headstock is mounted on a broad saddle base and can be traversed in either direction along the two-shear bed by means of a lead screw and nut, which action generates the required spring helix in much the same way as cutting a screw thread in a lathe.

Pitch Changing

Change wheels giving the required pitch are mounted on a swing frame at the end of the bed. The screw is driven from the rear of the main headstock spindle through a reversing gearbox

and splined shaft in front of the machine.

The drive to the lead screw also incorporates a two-speed gear change giving fine and coarse pitch ranges. A special dwell clutch allows the headstock to remain stationary at either end of the traverse while the mandrel completes a half revolution to form the partial coil constituting the flat end of the spring. The outer mandrel support is clamped to the bed and has three adjustable rams fitted with bearing rollers which can be set to suit mandrels of varying diameters. An eccentric clamping device attached to the outer end of the mandrel grips the starting end of the wire; further guide rollers ensure contact to the mandrel during spring forming.

Electrical Equipment

The machine is driven by a 12-h.p. slipping a.c. reversing motor, with speed control by rotor resistance. The motor is mounted on the headstock and drive is by multiple vee-belts. The machine will deal with spring material up to 1½ in. diameter from ½ in. to 3½ in. pitch. A maximum mandrel diameter of 6 in. can be admitted through the support stay, while the maximum longitudinal travel is 5 ft. 2 in.

Spindle speeds have a range of from 2 to 193 r.p.m. and an electrically-operated brake quickly brings the headstock to rest when the motor is switched off. A travelling operating platform attached to the saddle carries a motor controller, while a range pointer and adjustable markers are set to give visual indication to the operator when the traverse is complete. Electrical overrun trip switches are provided at the extremities of the travel, and hand levers for gear changing and traverse reversal are conveniently accessible from the operating platform.

Cape Western Electrification, South African Railways

(Continued from page 212)

of 6,000 ft., springs being used throughout to maintain the tension in the contact and catenary wires within prescribed limits.

Electric Locomotives

A contract for forty locomotives for this service was placed by the South African Railways with the North British Locomotive Co. Ltd., the General Electric Co. Ltd. being the contractor for the electrical equipment. Known as the "4E" class, these locomotives are among the largest and most powerful yet built for any 3-ft. 6-in. railway. They are rated at 3,030 h.p. for one hour at

full field with a tractive effort of 42,600 lb. and a maximum speed of 60 m.p.h. The "4E" has a service weight of 155 tons and is provided with six nose-supported, axle-hung traction motors driving the wheels through rubber resilient gearwheels. The locomotive is 71 ft. 8 in. long over couplers.

These locomotives are of the 1-Co+Co-1 type and particular attention has been paid in the design to the weight distribution in order to ensure freedom from oscillation at speed on the 3-ft. 6-in. gauge track. Maintenance is carried out from the new enlarged electrical running sheds at Salt River (Cape Town), which also carry out maintenance for the electrified suburban section in the Cape Town area.

It is thought that the remainder of the

section from Worcester to Touws River will be opened for service during November, 1953, and thereafter the traffic will be progressively taken over by electric traction as locomotives become available.

CLOSING OF SHOTLEY BRIDGE STATION, N.E. REGION.—Shotley Bridge Station, N.E. Region, between Newcastle and Consett, will be closed completely on and from Monday, September 21. Alternative transport for passengers is provided by road services between Consett and Newcastle at 15-min. intervals from a stop ¼-mile from Shotley Bridge Station. All parcels and freight traffic will be diverted to Blackhill Station and the existing road collection and delivery service for parcels and freight "small" operating from that point will be maintained.

Western Region Named Expresses



The "Inter-City" Paddington-Birmingham-Wolverhampton express near Gerrards Cross



A "Britannia" class Pacific emerging from Box Tunnel on the "Merchant Venturer" Paddington - Bristol and Weston-super-Mare service

RAILWAY NEWS SECTION

PERSONAL

The Minister of Transport has appointed General Sir Brian Robertson, Bart., G.C.B., G.B.E., K.C.M.G., K.C.V.O., D.S.O., M.C., to be Chairman of the British Transport Commission in succession to Lord Hurcomb, G.C.B., K.B.E., whose term of office expires on August 31, 1953. General Robertson was born on July 22, 1896. From the Royal Mili-

Field Marshal Lord Alexander, Commander-in-Chief, Italy. In 1945 he became Chief of Staff and Deputy Military Governor, British Zone, Control Commission of Germany. He was promoted Lt.-General, 1946, and General, 1947. In 1947 he became Military Governor and Commander-in-Chief of the British Forces in Germany and in 1950, U.K. High Commissioner, Allied High Commission. The same year he was appointed Commander-

Mr. Bhattacharyya served in Burma as well as in India in various capacities as a Finance Officer, and held dual charge as Joint Secretary, Ministry of Finance, as well as Secretary to the Economic Committee of Cabinet for several years. In 1950, he visited Australia in connection with the Colombo Plan and after that was actively associated with its various conferences. In 1952, he was a member of the Mission to the U.S.A., and he was largely



General Sir Brian Robertson, Bart.
Chairman Elect,
British Transport Commission



Mr. P. C. Bhattacharyya
Financial Commissioner for Railways,
Government of India

tary Academy he was commissioned in the Royal Engineers in November, 1914; a few months later he was serving on the Western Front. With one brief interval he continued on active service in France, Belgium and Italy until the Armistice, being awarded the D.S.O. and Military Cross and being three times mentioned in despatches. He was again mentioned in despatches and awarded a brevet as Major for his work in the Waziristan Expedition in 1922-23. After passing through the Staff College and making a prolonged tour of South America to study the military resources and organisation of that Continent, he retired from the Army in 1933 and settled in South Africa. Two years later he became Managing Director of Dunlop South Africa Limited. In the 1939-45 war he joined the Union Defence Force from the Reserve of Officers and went with the South Africans to the Middle East. Seconded from the South African to the British Service, he was appointed Chief Administrative Officer to

in-Chief, Middle East Land Forces, and in March, 1953, he became Adjutant General to the Forces with effect from this summer. General Robertson has been released from this appointment so that he may take up the Chairmanship of the British Transport Commission.

After the Ministry of Transport and Ministry of Civil Aviation are amalgamated in October, Sir Arnold Overton, Permanent Secretary of the Ministry of Civil Aviation, will retire from the public service, having reached the age of 60. Sir Gilmour Jenkins, Permanent Secretary of the Ministry of Transport, will be the Permanent Secretary of the combined Ministry.

Mr. P. C. Bhattacharyya, who was appointed Financial Commissioner for Railways, Government of India, in December last, was born on March 1, 1903, and educated at the Calcutta and Dacca Universities. He joined the Indian Audit & Accounts Service as a probationer in 1928.

responsible for the successful negotiation of a World Bank loan to the Indian Iron & Steel Company. In Washington, he studied India's stores purchase arrangements abroad, and was a member of the committee which reported on the working of India Supply Mission, Washington. Mr. Bhattacharyya has negotiated agreements with world oil interests with a view to establishing oil refineries in India. He is a Government Director on Sindri Fertilizers & Chemicals Limited, Hindustan Shipyard Limited, Hindustan Machine Tools Limited, and the Tata Locomotive & Engineering Co. Ltd. The last-named company is engaged in the manufacture of metre-gauge locomotives, and the Indian railways have thus a direct interest in this concern. In addition, he has been appointed as Adviser to the Stores Purchase Enquiry Committee set up by the Government of India to suggest, *inter alia*, measures to put the stores purchase organisation in India on a sounder and healthier footing.

Mr. R. H. Dobson has been appointed Managing Director of the Antofagasta (Chili) & Bolivia Railway Co. Ltd. He has also joined the boards of its associated companies. Mr. Dobson, who was born in 1903, was General Manager of the Great Western of Brazil Railway Co. Ltd. When that railway passed to national ownership in November, 1950, the services of Mr. Dobson were retained by the Brazilian Government and he was appointed Sub-Director of the Rede Ferroviária do Nordeste, continuing also to act as liquidator's representative. The services of Mr. Dobson

phone Company of Pernambuco Limited. To these offices he added that of Stores & Shipping Superintendent of the Great Western Railway of Brazil in November, 1924, holding them concurrently until the sale of the Pernambuco concerns to the American & Foreign Power Company in 1928. Mr. Ellis was appointed Assistant Secretary, London Committee, Piræus-Athens-Peloponnesus Railway in 1930, and visited Greece to report on the Stores Department of that railway, at the same time retaining his appointment with the G. W. of Brazil Company. The London

Manager. He is succeeded by Mr. Barney Caplan, Chief Clerk to the Vice-President of Traffic.

Mr. J. N. Das, Chief Commercial Officer, Eastern Railway, India, has retired. He has been succeeded by Mr. R. K. Bokil.

Mr. W. J. Amies, Assistant Secretary of the Railway Clearing House, has retired. Mr. W. S. Cutler, who has succeeded Mr. Amies in an acting capacity, entered Clearing House service as a junior clerk in 1913 and, after experience in



Mr. R. H. Dobson

Appointed Managing Director,
Antofagasta (Chili) & Bolivia Railway Co. Ltd.



Mr. F. O. Ellis

Sole Purchasing Agent in London,
Rede Ferroviária do Nordeste do Brasil

were requisitioned by the Minister of Transport of Brazil and he was commissioned by the Director General of Railways as Co-ordinator of Rail Transport to several of the largest railways in Central and Southern Brazil. Later he was attached to the Brazilian section of the Mixed Brazilian-American Commission and assisted in the elaboration of re-equipment programmes for many Brazilian railways.

Mr. F. O. Ellis, Sole Purchasing Agent in London of Rede Ferroviária do Nordeste do Brasil for its requirements in the United Kingdom and Europe, joined the Great Western of Brazil Railway Co. Ltd. in March, 1910, as a junior clerk, coming direct from school. From August 12, 1914, to June, 1919, he served with H.M. Forces in the Mediterranean and France, attaining the rank of Captain. He was wounded at Ypres in 1915. On demobilisation, he was appointed Stores & Shipping Superintendent in London of the Pernambuco Tramways & Power Co. Ltd. and the Tele-

Committee was dissolved in June, 1936. Mr. Ellis was appointed Secretary of the Great Western of Brazil Railway Co. Ltd. in 1938, and also of the Madeira Mamore Railway Company. The G. W. of Brazil Company was transferred to the Brazilian Government in 1950, and, in 1951, Mr. Ellis was appointed Sole Purchasing Agent in London by its successor, Rede Ferroviária do Nordeste.

The following appointments have been announced by British Railways, Scottish Region:—

Mr. J. W. Galbraith, Operating Superintendent's Office, Glasgow, to be Assistant to District Traffic Superintendent, Ayr.

Mr. S. R. Hall, Headquarters Inspector, Derby, to be Assistant Outdoor Carriage & Wagon Engineer, Cowfairs.

Mr. Hubert H. Scott, Assistant to the Vice-President of Traffic, Canadian Pacific Railway, has been appointed to the new post of Assistant Steamship Passenger

various departments, was appointed Secretary of the R.E.C. Mineral Managers & Stores Superintendents Committees in 1940. In 1942 he became Assistant for Mileage & Freight Rolling Stock matters and, in 1946, was promoted to be Assistant Head of the Secretarial Department, and Head of that Department in July, 1947. When the Railway Executive was being set up in 1947 Mr. Cutler was temporarily released from his Clearing House duties to assist in the establishment of the R.E. Secretariat at Marylebone, and, on February 1, 1948, he was transferred to the Railway Executive staff as Assistant to Secretary.

Mr. T. Tulloch, Dock Superintendent, Western Docks, Hull, has been appointed Docks Manager, Fleetwood, in succession to Mr. S. Rigg, who has retired.

We regret to record the death, on July 23, at the age of 70, of Mr. H. D. Furley, Chief Operating Superintendent.

North Western Railway, India, 1934-37. Mr. Furley served with the N.W.R. for 31 years. A Memorial Service was held at Tonbridge School Chapel on July 26.

Mr. D. C. Woodward, C.M.G., General Manager, Nigerian Railway, whose impending retirement this month was recorded in our June 12 issue, left Nigeria for this country on August 18.

Mr. F. A. Gaffney, Chief of Transport Research, Canadian National Railways, has been appointed General Manager under the jurisdiction of the Office of the Vice-President of Operations, C.N.R., of a new road transport department which will organise all Canadian National Railways highway services with the exception of those of the Canadian National Express. It will be responsible for the administration of roadway transport lines, including schedules, maintenance, tariffs and extensions of services for both bus and cartage operations and has been formed in an effort to provide greater efficiency and economy of operation.

The following changes in the Purchasing and Stores Department of the Canadian Pacific Railway Company have been announced:—

Mr. F. G. Fawke, Purchasing Agent, London, England, will retire on August 31, 1953, after more than 45 years' service.

Mr. G. Groome is appointed Purchasing Agent, London, to succeed Mr. F. G. Fawke, effective September 1, 1953.

Mr. W. M. B. Lamb is appointed Assistant Purchasing Agent, Liverpool, effective September 1, 1953, succeeding Mr. Groome.

Mr. A. Endicott, M.B.E., F.R.I.C.S., Chief Estate Rating Surveyor, Railway Executive, is retiring from the service on December 31, 1953.

Mr. David S. Davies, Assistant to the District Commercial Superintendent, Hull, has been appointed Assistant District Commercial Superintendent, Peterborough, Eastern Region, British Railways, in succession to Mr. E. I. Boyd, with effect from July 27, 1953.

The following appointments have been announced by the Illinois Central Railroad:—

Mr. Franklin A. Fitzpatrick, Superintendent, Springfield Division, has been appointed Manager of Personnel.

Mr. Wayne A. Johnston, Jr., Trainmaster, Kawahee, will succeed Mr. Fitzpatrick as Superintendent of the Springfield Division at Clinton.

Mr. F. Heimlicher, Jr., General Freight Agent, Memphis, has been appointed Assistant Freight Traffic Manager, St. Louis.

Mr. W. Richard Jones, Assistant Freight Agent, Memphis, has been appointed Assistant Freight Traffic Manager, Memphis.

Mr. J. E. Gardner, General Agent, Pittsburgh, General Freight Agent, Memphis, Tenn.

The following four promotions in the Operating Department of the Illinois Central Railroad to be effective August 1 have been announced:—

Mr. Otto H. Zimmerman, Jr., will become General Manager; Mr. Edward H. Buelow will succeed Mr. Zimmerman as General Superintendent of Transportation; Mr. S. C. Jones will succeed Mr. Buelow as Superintendent of the Iowa Division at

Waterloo, and Mr. F. Kenneth Stanford will succeed Mr. Jones as Superintendent of the Mississippi Division at Jackson, Tenn.

Mr. E. H. Hallmann, Superintendent, Springfield Division, Clinton, Illinois Central Railroad, has been appointed Director of Personnel in succession to Mr. Gideon J. Willingham, who will become President & General Manager of the Peoria & Pekin Union Railway on September 1.

We regret to record the death on August 6, at the age of 71, of Mr. A. J. Lane, Works Manager of Vulcan Foundry Limited 1917-46.

We regret to record the death, on August 3, of Mr. E. F. Spanner, Founder and Managing Director of Spanner Boilers Limited.

Mr. Andrew R. McCosh has been appointed a Director of William Baird & Co. He is on the board of Bairds & Scottish Steel.

Mr. S. A. Roberts, A.M.I.Mech.E., has been appointed General Manager of the group of companies controlled by B.S.A. Tools Limited.

Mr. A. D. Mackay, Managing Director of the Bergius Co. Ltd., has been appointed Deputy Chairman to the board of Henry Meadows Limited.

Mr. H. Bishop has been elected President of the Council of the Institution of Electrical Engineers for 1953-54.

Mr. E. S. Waddington, F.S.E., A.M.(s.a.), I.Mech.E., M.Inst.W., Associate I.E.E., Associate (s.a.), I.E.E., of Philips Electrical Ltd., Industrial Products Dept., has been re-elected as Vice-Chairman of the Finance Committee of the Institute of Welding for the year.

Mr. H. Norman G. Allen has been re-elected Chairman of the Council of The British Internal Combustion Engine Research Association for the current year.

We regret to record the death, at the age of 87, of Mr. A. M. Willcox, a founder and Editor for 43 years of the *Tramway & Railway World* (now *Transport World*).

Sir Percival J. Griffiths, who is on the board of the Barsi Light Railway Company, has been appointed a Director of the India General Navigation & Railway Company. He fills a vacancy resulting from the resignation of Mr. A. d'Auyers Willis.

Mr. A. L. Cramb has been appointed Manager of the branch office in India of the Brush Electrical Engineering Co. Ltd., Loughborough, with the status of a local director (in India). He remains a Director of Brush Export Limited.

Mr. E. W. Spalding, A.M.I.Mech.E., Director & Commercial Manager of Ruston & Hornsby Limited, has retired after more than 50 years' service with the company. He has been succeeded as Commercial Manager by Mr. C. T. Alderson, J.P., M.A.(Cantab.), Contracts Manager.

Mr. G. C. R. Eley, C.B.E., has accepted an invitation to become a Director and Deputy Chairman of the Brush Electrical Engineering Co. Ltd. Major Noel E. Webster, O.B.E., M.C., M.I.M.E., has also

joined the Board. Major Webster has much experience of the engineering industry and is President-Elect of the Institution of Mining Engineers.

Mr. G. R. Johnston, Transport Economist, Montreal, Canadian National Railways, has been appointed Chief of Transport Research, C.N.R.

Mr. H. B. McAuslan has been appointed Resident Representative of the Brush Group in India, Pakistan, and Burma. He will be travelling to India to take up his new duties at the end of August. He has been made a Director of Associated British Oil Engines (Export) Limited, ABOEX, National Oil Engines (Export) Limited, NOEX & Brush Export Limited. Mr. McAuslan's new duties are the supervision of ABOEX and NOEX agents in India, Pakistan, and Burma, and of Brush Export agents in Pakistan and Burma. He will be responsible to Mr. J. P. Ford, Managing Director of ABOEX, NOEX, and Brush Export.

Mr. E. B. Walker, M.I.Mech.E., Technical Director, retired from the board of Walker Bros. (Wigan) Ltd., at the end of June, at his own request. Mr. Walker, who is now 69, has not been in good health recently. He joined the firm in 1903 as an apprentice, and has completed 50 years' unbroken service. Mr. Walker was appointed a Director in 1920, and Technical Director in 1943.

INSTITUTE OF TRANSPORT AWARDS, 1952-53

The Council has approved the following awards for papers submitted during the Session 1952-53 and in respect of successes at the Institute examinations held in 1953:—

Triennial Award of Merit: To Sir Reginald Wilson, M.Inst.T., Comptroller, British Transport Commission, for his paper on the "Framework of Public Transport with special reference to the problems of monopoly, undue size and incentives."

British Transport Commission Awards: (1) To A. J. Pearson, M.Inst.T., Chief Officer (Administration), Railway Executive, for his paper on "Developments and Prospects in British Transport, with special reference to Railways"; (2) to C. F. Klapper, A.M.Inst.T., Editor, *Modern Transport*, for his paper on "The Decline and Fall of London Tramways"; (3) to J. A. Birks (Student), Trainee, British Electric Traction Associated Omnibus Companies' Training Scheme, for his paper on "Past and Present Influences in urban growth affecting the development of the Road Passenger Transport Industry"; (4) to T. B. Maund (Graduate), Chart Room Supervisor, W. C. Standerwick, Ltd., for a meritorious performance in the Associate Membership examination.

The Award is made from funds provided for the purpose by the former Canal Association and is known as the Canal Association Award.

In 1954 the cash prize attached to the Award will be £40 and the Council of the Institute will welcome original papers contributing to the knowledge of Inland Water Transport in all its spheres.

Notes for the guidance of authors of papers may be had from the Institute of Transport, 80, Portland Place, London, W.1. The approximate length suggested for papers is 6,000-8,000 words and entries must be sent to the Institute by April 30, 1954. Papers read before meetings of the Institute during the forthcoming Session will also be eligible for consideration if a copy is deposited.

British Railways Winter Passenger Services

Improved long-distance business services; many more runs at 60 m.p.h.; Bristol to Paddington in two hours; more third class two-berth compartment sleeping cars

The winter timetable of British Railways which comes into force on September 21, incorporates improvements in the summer timetable, which itself is the best since the war.

Compared with last winter, 126 trains are being speeded up by 10-60 min.; many of the accelerated summer schedules are being retained throughout the winter, and a two-hour service from Bristol to London is being restored for the first time since the war.

Among local services, all those connecting Cardiff with the Aberdare, Rhondda, and Taff Valleys are being remodelled on the basis of regular-interval departures, to give a better service at lower operating cost which it is hoped will attract much additional traffic. Local services in Glasgow on the Cathcart Circle line will also run on regular-interval timings.

Early Morning Business Expresses

The early morning breakfast car express from Kings Cross at 7.50 a.m. calling at Hitchin at 8.31 a.m., Saturdays excepted, is being reorganised to serve Sheffield, Darlington, and Newcastle, besides Leeds and Bradford. This enables London businessmen to arrive in Newcastle in time for lunch at 12.46 p.m. It will be achieved by attaching to the 7.50 a.m. train a Newcastle portion which will be detached from the main Leeds and Bradford service at Doncaster, going forward from there to Newcastle at 10.45 a.m. and covering the 76 miles from Doncaster to Darlington in 75 min. at an average speed of 61 m.p.h. Southbound the Newcastle coaches will leave there at 5.3 p.m. and will be attached at Doncaster, reached after a 60 m.p.h. non-stop run from Darlington, to the corresponding up service leaving Bradford at 6.3 p.m. and Leeds at 6.26 p.m., due Hitchin 9.22 and Kings Cross 10.8 p.m.

To give a new early morning service from London to Sheffield, the 7.50 a.m. from Kings Cross will call additionally at Retford, being scheduled to run the 106½ miles from Hitchin to Retford in 97 min. at a start-to-stop average speed of 66.3 m.p.h., the fastest timing of any train on British Railways since 1939. The corresponding up train will similarly call at Retford to pick up passengers from Sheffield, and will run from Retford to Hitchin in 98 min., or 65.3 m.p.h.

The overall journey times between Kings Cross and Sheffield by this service will be 3 hr. 10 min. northbound. This is the quickest time by any route between London and Sheffield since before the war. Southbound, it will be 3 hr. 41 min.

A Pullman service from London to York, with connection to Scarborough, will be provided by stopping the 4.45 p.m. from Kings Cross, the "Tees-Tyne Pullman," at York.

Improved Services in Kent

To give Ashford a better service, the 5.40 p.m. from Cannon Street to Ashford, which at present calls at all stations from Knockholt, will include a fast portion from Tonbridge to Ashford, Folkestone, and Dover, reached at 7.6, 7.26, and 7.40 p.m. respectively. Additional services from Ashford to London will be provided by stopping the 7.38 a.m. and 3.25 p.m. trains from Margate at Ashford; with quicker

running between stations this will increase the journey time between Folkestone and London by only one min. and five min. respectively.

Cross-Country Services

For the first time since the war there will be a day service from Plymouth to Scotland; the present 8.45 a.m. train from Plymouth will be retimed to leave at 8 a.m. and will connect at Crewe with the "Mid-Day Scot" from Euston to Glasgow.

The prewar 9.15 a.m. train, the "Devonian," from Paignton to Bradford, will run during the winter for the first time since the war.

Bristol to Paddington in Two Hours

The 11.45 a.m. from Bristol to Paddington will be accelerated by 10 min. and will cover the 117½ miles via Badminton in two hours; the two-hour service between London and Birmingham will also be extended to the Western Region route, the 9.0 a.m. from Paddington (Saturdays excepted) and 9.0 a.m. from Birmingham, Snow Hill. Two-hour tim-

ings between Euston and Birmingham New Street were restored this summer.

More Mile-a-minute Timings

Altogether 27 start-to-stop timings at 60 m.p.h. or over will operate on British Railways this winter compared with three last winter. Besides those already mentioned in connection with the revised business service between London and Sheffield and Newcastle, new timings in this range will include three between York and Darlington, also the following: 11.30 a.m. (Saturdays) Euston to Wolverhampton (60.6 m.p.h. Euston to Coventry, 94 miles); 1.15 p.m. Paddington to Weston-super-Mare (60.5 m.p.h. Paddington to Bath, 106.9 miles); and 8 a.m. Cheltenham to Paddington (60 m.p.h. Kemble to Paddington, 91 miles).

Sleeping and Refreshment Car Facilities

The number of sleeping car services each week will be 384, compared with 379 last winter. Nearly half the third class sleeping cars will be of the new type, with two berths to a compartment with full bedding and hot and cold water.

The number of services each week on which restaurant or buffet or Pullman cars will be available will be 3,768, or 97 more than last winter.

Reserved seats will be available, still at the prewar charge of 1s., in 48 more trains a week than last winter, or 3,975 in all, against 2,042 in the 1948 winter service.

Western Region Road Motor Service Jubilee

Plaque commemorates Helston-Lizard route

A plaque was unveiled at Helston Station, Western Region, on August 17, by Mr. A. E. C. Dent, Executive Officer for Road Motor Engineering, the Railway Executive, to commemorate the jubilee of the first Great Western Railway omnibus service. The plaque is displayed on the outside of the station buildings at Helston and is worded as follows:—

This Tablet commemorates the opening of the First Railway Motor Omnibus Service, which was run by the Great Western Railway, from Helston to the Lizard, 17th August, 1903. Erected 17th August, 1953.

An enlarged photograph of the first bus is exhibited inside the station booking hall.

Evolution of Service

The announcement that five motor vehicles were to be purchased for road motor services was made at the general meeting of the Great Western Railway Company by the Chairman, Lord Cawdor, on August 13, 1903, when it was also stated that the first car would be operated between Helston and the Lizard.

Two 16-h.p. Milnes-Daimler vehicles, previously owned by Sir George Newnes, were placed in service between Helston and the Lizard. The technical point that only vehicles under 3 tons in weight had been exempted from the necessity of being preceded by a man carrying a flag was evaded by removing items of equipment and painting the chassis "2 tons 19 cwt."

There was a break in the service from October, 1904, to April, 1905, when the Helston Rural District Council refused to steam-roll the road. The railway loaned one of its own steam rollers to the Cornwall County Council to improve road conditions. By 1904 the Great Western had 34 passenger road vehicles. Progressive

increases in the fleet raised it to a total of over 950 road vehicles, including 168 buses, by 1927. In 1929 the railway linked its interest with the National Omnibus & Transport Co. Ltd. and later with the British Electric Traction Co. Ltd.

The history of independent G.W.R. road passenger services ended with the handing over of the last bus in the company's livery to the Associated Southern National Omnibus Company at Weymouth on December 31, 1933.

Arc-Welding Demonstration

A demonstration of four new diesel-driven arc welding plants was given at Earls Court Stadium on August 14, by British Twin Disc & Clarifiers Limited. Six similar models are marketed, all capable of producing instantaneous and reliable power for on-the-spot performance.

These units are simple in design, combining a Lister "Freedom" diesel engine with an electric welding generator produced by Lancashire Dynamo & Cryptol Limited and mounted in a strongly constructed chassis.

The smallest model, type 240/2, of 16 h.p. has an engine speed of 1,550 r.p.m. The other five, models 240/3, 300/3, 300/4, 500/6 and 240/4 with 24 h.p., 24 h.p., 32 h.p., 48 h.p. and 32 h.p. respectively, each have an engine speed of 1,500 r.p.m. Continuous generator output for the six models respectively is 30/240 amp., 30/240 amp., 30/300 amp., 30/300 amp., 50/500, and 30/240 amp. double or 30/480 amp. single. Intermittent generator output respectively is 300 amp.,

360 amp., 400 amp., 450 amp., 600 amp. and 300 amp. double or 600 amp. single.

Automatic Speed Control

In every case drive is provided by the diesel engine which is direct coupled to the cumulatively compound wound D.C. generator. A centrifugal governor provides very close speed control and maintains the "settled" variation within 2 per cent., doing away with the necessity for any pneumatic or electric auxiliary governing, while the fully-automatic engine release limits over-loading to 10 per cent. In every case the engine is fitted with a heavy flywheel to control cyclic irregularity.

The generators are self-exciting for simplicity and saving in weight, and drip proof protected. Dual control of output is provided by a separate voltage and fine current control operated independently of the main "click action" current selector. These controls are grouped on a clearly engraved control plate, and, for the guidance of the operator, voltage and current dials are graduated into sections and coloured sectors to show the general relationships between voltage and current output ranges.

Connections from the generator windings are taken direct to the current selector switch on all the higher current ranges, there being no series resistances whatsoever in the circuit to lower the overall efficiency of the plant. Unbreakable, rustless and corrodeless continuous strip field resistances, cooled by circulating air from the generator fan, are provided for the control of the lower current ranges of the generator.

Sturdiness and Portability

Each unit is mounted on a heavy fabricated baseplate. This has machined pads ensuring the correct alignment of engine and generator, and the whole unit is enclosed in a pressed steel housing with storage space for accessories and electrodes. Detachable side covers are provided to give easy access to all working parts.

Five types of undercarriage gear are available making the plants suitable for hand trailing in works and on certain contract sites, or for high-speed towing behind a vehicle.

The B.T.D. arc welding plant type 300/3 will be on view publicly for the first time at the Engineering, Marine and Welding Exhibition and the Chemical Plant Exhibition which opens at Olympia on September 3.

Benguela Railway Company

The annual report of the Benguela railway company for the year 1952 shows an increase in receipts over the preceding year of escudos 69,466,991 \$11, making a total of esc. 320,970,162 \$26. At the same time, working expenses increased by esc. 32,176,187 \$52, to esc. 179,157,541 \$78.

Practically the whole of the increase in receipts was attributed to goods traffic, which amounted to esc. 66,815,758 \$12, the rest being fairly equally divided between passenger and sundries receipts. The 1952 figure of 1,348 for km. worked corresponded with the previous year, but for km. run there was an increase from the 1951 figure of 3,655,521 to 4,064,705. Annual revenue per km. also rose over the 1951 figure, being esc. 238,108 \$43 and 186,575 \$05 respectively, while annual expenditure per km. also rose, the figure being esc. 132,906 \$19 and 109,036 \$61. Revenue per train km. also showed an

increase at esc. 78 \$97 compared with esc. 68 \$80 for the previous year. The working coefficient for 1952 was 0.558 compared with 0.584 for 1951. Of the working expenses, esc. 159,032,514 \$78 was accounted for by ordinary expenditure and esc. 20,125,000 \$00 for renewals fund. The amount carried forward for the renewal fund was esc. 103,737,302 \$85, after deduction for the cost of work in 1951 and 1952, less esc. 498,341 \$98 for the realisation of capital assets.

At the recent annual general meeting in Lisbon, deduction was approved of esc. 31,844,318 \$80 for service of debentures from the net revenue from working, esc. 127,781,284 \$66, leaving a profit of esc. 95,936,965 \$86 and with further deductions, leaving a general reserve of esc. 75,072,842 \$56.

Reference was made to the plantation of eucalyptus trees, used as fuel for locomotives; there are now about 72,000,000 trees.

The report refers to the fiftieth anniversary of the company, which occurred on November 28, concession agreement being made by the Portuguese Government with the late Sir Robert Williams for the construction and operation of the Benguela Railway fifty years ago to the day. During the anniversary celebrations in October, a banquet was held, presided over by the Portuguese Minister for Overseas Affairs.

Dorada Railway Co. Ltd.

The report and accounts of the Dorada Railway Co. Ltd. for the year ended December 31, 1952, show operating revenue of £427,909, compared with £427,428 in the preceding year, and expenditure of £377,442 (£386,425). The net profit for the year was £5,683, and £7,475 was brought forward. After deduction of £23,297 representing the amount written off the investment of the subsidiary company and adjustment of taxation profit there remained a debit balance of £10,139.

Passengers conveyed totalled 226,850 compared with 241,173, but goods tonnage decreased from 177,701 to 157,257, because of increasing competition and the unreliability of the Magdalena River. Receipts from livestock traffic rose by 72 per cent; the number of livestock carried was 44,895, against 33,005 in 1951.

In his statement accompanying the report, Mr. Robert Adeane, Chairman, referred first to the loss which they had suffered in the death last January of Brigadier Storar, a member of the board since 1948. They welcomed to the board Lord Broughshane, who had a comprehensive knowledge of financial affairs and company administration.

An adverse judgment by the highest legal authority in Colombia in respect of tax for the period 1903-1923 had been served on the company; although this might be negated by further legal action there was a present potential liability in respect of those years of some £187,000. Claims against them for tax for periods since 1923 had still to be resolved.

Because of a substantial cut in expenses the revenue account balance was nearly £9,500 better than in 1951. Payments under the Colombian Social laws alone were equivalent to £75,000; in 1941 the figure was £9,000.

Effect of Building Magdalena Railway

The completion of the railway which had been begun from La Dorada northwards parallel to the Magdalena River

should bring additional traffic to the Dorada Railway. Nevertheless, added the Chairman, rail and road competition was intense and likely to increase. It was not possible to give a long-term forecast of the company's prospects, but the Chairman thought that results for 1953 should show some improvement.

The annual general meeting will be held at Dashwood House, London, E.C.2, on September 17.

Staff & Labour Matters

Engineering Wage Claim

In his opening address at the annual meeting of the C.S.E.U. last week at Great Yarmouth, the President, Mr. H. G. Brotherton, spoke of the reasons for an increase of 15 per cent in the wages of engineering and shipbuilding workers. He claimed that the real standard of living of the majority of engineering and shipbuilding workers had fallen, though productivity and employers' profits had risen.

Since the summer of 1947, he said, the cost of living had risen by over 40 per cent, but average earnings in the industry by only 34 per cent. This did not include overtime payments, as the unions contended that this extra money was more than earned by the strain and loss of leisure involved.

In a similar period productivity had increased by more than one-half and profits had doubled. From these profits a substantial wage increase could be given without the need to raise the prices of engineering products. Mr. Brotherton suggested that restrictions on British exports were a more serious hindrance to prosperous trade than advances in wages.

Nationalisation of Engineering Industry

Later, discussion took place on the C.S.E.U. "Plan for Engineering" as a step towards bringing all the engineering industries under public ownership. The Confederation holds that there is a strong case for the nationalisation of the aircraft, machine tool and coal mining machinery industries, with public responsibility for manufacture, repair and maintenance of wagons and the inclusion of independent foundries in the iron and steel industry.

A resolution calling for a 40-hr. week without loss of earnings in all the industries with which the C.S.E.U. is associated, was passed unanimously.

A further resolution, viewing with alarm the increase in unemployment and expressing concern that large-scale dismissals could be forced upon the engineering industry at a time when the unions had no set policy to safeguard the interests of their members, was referred to the C.S.E.U. executive. This proposed that where redundancy occurred overtime should cease in the workshop concerned.

An amendment deleting this proposal and urging joint consultation on the subject between employers and unions and advocating the principle of "last in first out" was also referred to the Executive.

RAILWAY CRICKET COMPETITION FINAL.—The final of the British Railways Inter-Regional Cricket Competition for the Mitchell Hedges Cup, will be decided at Gordon Hill, on August 25, when a team from the Western Region will be opposed by a team from the London Midland Region. The Western Region has already defeated the Eastern and Southern Regions.

Fast U.S.A. Transcontinental Travel

Connections giving quicker transit times than by through sleeping cars

The fastest regular through service on record between the Atlantic and Pacific coasts has been established by the New York Central, Chicago & North Western, and Union Pacific Railways. Until now the through daily westbound sleeping car by this route has been attached to the N.Y.C. 3 p.m. "Advance Commodore Vanderbilt" out of New York, reaching Chicago, La Salle Street, at 7.30 a.m.; in Chicago it has been worked round to the C. & N.W. station for attachment to the 12 noon "Los Angeles Limited," reaching Los Angeles at 10.55 a.m. two days later. The overall journey time, allowing for the difference between Eastern and Pacific U.S.A. time, thus has been 71 hr.

This car has been transferred to the 10 p.m. "Chicagoan" out of New York, reaching Chicago at 3 p.m. next day; here it is attached to the streamline 7.15 "City of Los Angeles," due in Los Angeles at 9 a.m. two days later. This has cut the overall New York-Los Angeles time to 62 hr., but passengers must add to their fares the \$15 service charge for use of the "City of Los Angeles."

In the reverse direction, the car is worked in the 5 p.m. eastbound "City of Los Angeles," reaching Chicago at 10.45 a.m. two days later, in time to attach to the 3 p.m. "Advance Commodore Vanderbilt" from Chicago, reaching New York at 8 a.m. The acceleration eastbound is 10 hr., and cuts the journey time to 60 hr., which over a route 3,259 miles in length entails an average speed across the continent of 54.3 m.p.h.

Hitherto the fastest through coast-to-coast journeys have been by the sleeping cars included in the "Twentieth Century Limited" of the New York Central, and the "Broadway Limited" of the Pennsylvania, both 16 hr. trains from New York to Chicago; from Chicago the cars have run attached to the "Chief" of the Atchison, Topeka & Santa Fe, reaching Los Angeles at 8.30 on the third morning after departure from New York. This journey takes 65½ hr. Eastbound these cars leave Los Angeles with the "Chief" at 12.30 p.m., and reach New York at 9.30 a.m., the transit time being 66 hr. The service charge by the "Chief" is \$10, and there is a service charge also by the "Twentieth Century" but not by the "Broadway Limited."

Other through sleeping cars work between New York and Los Angeles and between New York and San Francisco by various routes. As yet no "coach" facilities are available.

Fastest Journey "Coach" Class

A "coach" passenger who changes trains and stations in Chicago can make an even faster transcontinental journey. If he catches the "Gotham Limited" of the Pennsylvania Railroad from New York at 11.35 p.m., he can be in Chicago at 3.40 p.m. next day, in time to catch the 5.45 p.m. all-coach streamliner "El Capitan" of the Santa Fe, which is into Los Angeles at 7.15 a.m. the third day; the latter, with its 39½ hr. run from Chicago to Los Angeles, is actually the fastest train operating between the two cities. The total travelling time is 58 hr. 40 min.

A faster journey still is possible to the eastbound passenger who risks a 75-min. connection in Chicago. If he leaves Los

Angeles with the "Super-Chief" all-Pullman streamline train at 8 p.m., he reaches Chicago at 1.45 p.m. two days later; this should connect with the 3 p.m. "Advance Commodore Vanderbilt," of the New York Central, reaching New York at 8 a.m.; the actual travelling time is 57 hr. This means crossing the maximum width of the North American continent at an average coast-to-coast speed of 57.9 m.p.h.

Contracts & Tenders

The Metropolitan-Cammell Carriage & Wagon Co. Ltd. has received a contract from the Benguela Railway for 100 bogie high-side wagons.

A contract valued at £286,000 has been placed by the Railway Executive with Metropolitan-Vickers Electrical Co. Ltd. for the manufacture and supply of electrical equipment for new rolling stock on the former Mersey Railway and the Wirral electrified lines.

Etablissements Carel Fouché & Cie, Paris, has received from the International Sleeping Car Company an order for 25 sleeping cars in stainless steel on the Budd system. As recorded in our July 24 issue 25 have also been ordered by the company in Belgium.

Maybach Motorenbau G.m.b.H., Friedrichshafen, has received from the German Federal Railway an order for 23 sets of Mekydro hydro-mechanical transmission of 1,000 h.p. capacity for installation in five twin-engine 2,000 b.h.p. diesel locomotives of class V.200 (two of which have been completed to be on show at the Munich Transport Exhibition), and for incorporation in V.80-class B-B locomotives of 800-1,000 h.p.

British Railways, London Midland Region, have placed the following contracts:—

Structural Waterproofers Limited, London, S.W.6: thermal insulation and waterproofing of reinforced concrete barrel vault shells and flat roofs at the road motor depot, St. Pancras Way, London

British Challenge Glazing Co. Ltd., London, E.15: patent roof glazing for engine shed at Bletchley Motive Power Depot

Leonard Fairclough Limited, London, S.W.1: drainage and formation renewal of the up and down lines between 1 mile 693 yd. and 1 mile 1,587 yd., and the stabilisation of the cutting slope on the up side at 1 mile 1,100 yd. on the Banbury branch (ex G.C. line)

Wm. Winstanley & Co. Ltd., London, S.W.1: cleaning and painting of Willesden Junction Low Level Station

The Butterley Co. Ltd., Butterley, near Derby: part supply of fabrication of steelwork for reconstruction of superstructure of bridge No. 6 on Runcorn branch

British Railways, North Eastern Region, have placed the following contracts:—

E. A. Foulds Limited, Colne: renewal of lifts at Newcastle Parcels Office

G. Dougill & Sons Ltd., Darlington: construction of inspection pits, hot ash pit, sunken ash wagon pit, drainage raft, including drainage, at Stockton Motive Power Depot

James Dingwall & Son, Gateshead: erection of new signalbox at Wardley Colliery
Whipp & Bourne Limited, Castleton, Lancs: eleven additional sets of changeover contactors for d.c. high speed circuit breakers, Tyneside electrified lines

Henry Berry & Co. Ltd., Leeds: one hydraulic press
Coventry Climax Engines Limited, Coventry: one fork-lift truck } for axlebox shop, Shildon Works

British Railways, Eastern Region, have placed the undermentioned contract:—

J. Youngs & Son, Ltd., Norwich: construction of new office accommodation at Norwich Victoria Goods Depot

The closing date for the receipt of tenders for ten 650/750 h.p. diesel-electric shunting locomotives for the South Australian Railways (see our May 29 and July 10 issues) has been further postponed to noon on August 25.

Tenders are invited by the High Commissioner for India for belting for train lighting. Full details are given under Official Notices on page 223.

The Director General of Supplies & Disposals, Railway Stores Directorate, New Delhi, is inviting tenders for the following:—

5,400 buffer plunger plugs (b.g.)

Tenders are to be submitted to the Director General of Industries & Supplies, Shahjahan Road (Section SRI), New Delhi, quoting reference SRI/16562-D/III, by August 26.

The Director General of Supplies & Disposals, Railway Stores Directorate, New Delhi, is inviting tenders for:—

320 liners (steel) semi-finished for hornblocks of coupled axlebox of "AWC" engines

320 wedges (steel) horn cheek for coupled axleboxes of "AWC" engines

Tenders are to be submitted to the Director General of Industries & Supplies, Shahjahan Road (Section SRI), New Delhi, quoting reference SRI/16574-D/I, by September 15.

The Special Register Information Service, Export Services Branch, Board of Trade, reports that the Consul General at Lourenço Marques has notified a call for tenders issued by the Ports, Railways & Transport Department, Lourenço Marques, for:—

Two tank locomotives for shunting, 0-8-2, 3 ft. 6 in. gauge, with two cylinders, saturated steam

The tractive effort at 0.85 b.p. must be sufficient to pull from a dead-start a train of 2,000 tonnes on the level, and the speed 12 km.p.h. hauling a train of 1,600 tons on the level

Fuel—Moatize bituminous coal, 6,300 calories per kg. and 12-14 per cent. ash

Frame—bar type
Maximum load per axle—12,000 kg. (unladen)

Diameter of driving and coupled wheels—1 m

Minimum radius of curves on track—90 m.
Boiler—to work at 13 kg. per sq. cm.

Valve gear—Walschaerts
Brakes—vacuum brakes, Dreadnought type or equivalent, acting on all coupled wheels. Also handbrake

Fuel capacity—not less than 2,500 kg.

Water capacity—not less than 10,000 litres

Couplings—central type, automatic, Atlas or Alliance

Spares and accessories—as specified in tender documents

Tenders close at 3 p.m. on October 19. Tenderers must pay a provisional deposit of 75,000 escudos. A copy of the tender documents and specification (in Portuguese) is available for inspection by United Kingdom firms in Room 801, Lacon House, Theobald's Road, London, W.C.1, until August 22 and thereafter on loan in order of application.

United Kingdom firms may submit tenders only through firms established in Mozambique whose names are registered with the Stores Department of the Treasurer (Almoxarifado de Fazenda, Lourenço Marques). A list of firms qualified to submit tenders on behalf of United Kingdom firms is obtainable from Room 801 at Lacon House. Firms who submit tenders are asked to notify the Export Services Branch of the Board of Trade, quoting reference ESB/368/53, so that the Consul-General at Lourenço Marques may be informed.

According to the Special Register Information Service of the Export Services Branch of the Board of Trade the United Kingdom Trade Commissioner at New Delhi, has been informed by the Trade Commissioner for the Jammu & Kashmir Government, 5, Prithviraj Road, New Delhi, 2, that a register of names of firms who wish to compete for calls for tender issued by this office is being formed. The office of the Trade Commissioner for Jammu & Kashmir is the official purchasing agency for the Jammu & Kashmir Government and all calls for tender for equipment and supplies required in connection with developments in Jammu & Kashmir will be issued by that office. In view of the pending allocation of seven crores of rupees by the Central Government for financing the Kashmir Development Plan, it is possible that calls for tender will be invited which are of interest to United Kingdom firms and their agents.

The attention of United Kingdom firms is drawn to the necessity of employing a local representative who will obtain the necessary documents, keep in touch with the authorities and be available for discussion on any technical points that may arise.

Interested United Kingdom firms should advise their agents to make application for registration forms, obtainable from the office of the Trade Commissioner, Government of Jammu & Kashmir, Registration Section, 5, Prithviraj Road, New Delhi, on payment of the registration fee of Rs. 3.

A copy of the application form for registration is available for inspection at the Board of Trade, Export Services Branch, Room 746, Lacon House, Theobald's Road, W.C.1.

IMPROVEMENTS TO STATION REFRESHMENT ROOMS IN SOUTH MIDLANDS.—The Hotels Executive of the British Transport Commission announces the opening of a new cafeteria and bar at Birmingham New Street Station, London Midland Region. Work at Rugby, in the same Region, is well advanced and is scheduled to be completed by the end of the month. The new Birmingham cafeteria, planned and equipped on the most modern lines, will serve a full range of light refreshments. The architect was Mr. J. M. Harrison, London Midland Region, who worked in collaboration with Mr. S. P. Smith, O.B.E., Chief Works Officer to the Hotels Executive.

Notes and News

Assistant Engineer (Railway Signalling) Required.—Applications are invited for the post of assistant engineer (railway signalling) required by the Crown Agents for the Colonies for its London office. See Official Notices on page 223.

Vacancy for Assistant Signal and Telegraph Engineer.—Applications are invited for the post of assistant signal and telegraph engineer, between 26 and 30 years of age, required for service in the chief engineer's department of the Rhodesia Railways. See Official Notices on page 223.

Closing of Woodhouse Mill Station.—British Railways, Eastern Region, announce that Woodhouse Mill Station will be closed to passenger train traffic from September 21. Facilities for passengers and parcels are available from Woodhouse Station, and there are regular omnibus services in the area.

Permanent Way Institution, London Section.—The joint meeting between members of the London and Birmingham Sections of the Permanent Way Institution, provisionally arranged for Saturday, September 5, has been cancelled. It has now been arranged for members of both sections to visit Lillie Bridge Works, London Transport Executive, on Saturday, September 12, commencing at 2.30 p.m.

Collision near Manchester Victoria.—A collision occurred at about 7.40 a.m. on August 15 between an L.M.R. electric train from Bury to Manchester and a steam train from Manchester to Bacup, both of which were passing over the Irk Valley Viaduct, about a mile from Manchester Victoria Station. The first coach of the electric train crashed through the parapet of the viaduct and fell 90 ft. into the River Irk. Two more coaches of the electric train, and the locomotive and two coaches of the steam train, were derailed.

Ten persons were killed and 59 injured, of whom 22 were detained in hospital. Emergency steam services were arranged over an alternative route, and the electric service was restored on the morning of August 17.

Derailment near Tamworth, L.M.R.—On August 16 the locomotive and eight coaches of the 9.28 a.m. express from Bradford to Bristol were derailed while passing Whately signal box, about four miles from Tamworth, L.M.R. Four passengers were injured, but only one was detained in hospital. Single-line working was restored at 10 a.m. on August 17 and both lines were again available as from 2 p.m. on that day. While the line was blocked trains were diverted via Lichfield and Sutton Coldfield.

Recommendations on Isle of Wight Railways.—The Central Transport Consultative Committee has considered the evidence given to the South-Eastern Area Transport Users' Consultative Committee at the public inquiry into the proposed closing of certain lines in the Isle of Wight, and has made the following recommendations to the British Transport Commission: (1) That the Newport-Freshwater line should be closed on September 21, or as soon afterwards as practicable; (2) that the Brading-Bembridge line should be closed on September 21; (3) that the continuation of the Cowes-Newport-Sandown line for not less than two years is not unreasonable. These recommendations have been accepted. The Central Transport Consultative Committee also suggested that in view of the intensive holiday traffic that was the principal reason for the railway's existence, holidaymakers should pay fares that would enable the lines to be worked without a loss, or at least with a loss substantially reduced. It further suggested a combined investigation by the railways, the Ministry of Transport, and the County Council of Transport improvements in general in the island, for it was felt inequitable to expect the

End of British Railway Ownership in Argentina



Group taken at the cocktail party held in Buenos Aires on July 31 to signalise the end of British railway ownership in Argentina (see our August 14 issue). Mr. Robert Montgomery, Joint Liquidator of the British-owned railways in Argentina, is third from the left

railways to incur indefinitely a loss approaching £300,000 a year without there also being some expenditure on better roads. A deputation from the island led by Sir Peter Macdonald, M.P. for the Isle of Wight, met the Parliamentary Secretary to the Ministry of Transport, Mr. Gurney Braithwaite, on August 19 to discuss island transport problems.

Brush Electrical Engineering Co. Ltd.—The consent of the Capital Issues Committee has been obtained to the proposal of the Directors of the British Electrical Engineering Co. Ltd. to raise approximately £914,000 net by an issue of £940,000 6 per cent £1 cumulative convertible redeemable £1 preference shares at par. An extraordinary meeting has been called for September 3 to sanction the issue.

Inquest on Stratford Accident, Central Line, L.T.E.—A verdict of death by misadventure was returned on August 17 at the resumed inquest on 12 persons killed in the collision between two London Transport Central Line trains near Stratford Station on April 8 (see our April 17 issue). The motorman of the Epping train, which ran into the rear of a stationary train for Hainault, said in his evidence that after being instructed to pass the signal at Stratford which had failed, he coasted down the gradient in the tunnel at 5 to 8 m.p.h. He saw no sign of obstruction until he ran into a cloud of dust. Almost simultaneously he saw the tail light of the stationary train ahead and released the dead man's handle, at the same time moving his brake handle to the emergency position. Recording their verdict, the jury cleared the motorman of blame.

Enlarged Showroom for the Selson Machine Tool Co. Ltd.—The accompanying illustration shows the recently extended showrooms at the Cunard works of the Selson Machine Tool Co. Ltd., one of the "600" Group of Companies. This extension and reorganisation were necessary adequately to display the comprehensive range of machine tools of both American and Continental manufacture, horizontal borers, plano-millers, centre, copying, and

capstan lathes, and so on, for which the company is sole agent in Great Britain. The company is also agent for the Morton keyway cutter and slotting machine, of American manufacture, one of which was recently used to cut a 5½ in. wide keyway in the 4 ft. 6 in. bore of a 22 ft. dia. manganese bronze propeller.

United of Havana Negotiations.—An Agency report from Havana states that the Cuban Government has opened negotiations for the acquisition of the United Railways of the Havana. A law authorising the Government to acquire the railway by purchase or expropriation was published last month. It sanctioned a 4½ per cent Government bond issue for not more than \$20,000,000, to be used for the acquisition of the railway and its subsidiary properties.

Specials for International Congress Visitors.—On Sunday, August 16, over 1,200 delegates from the International Congress of Home Economics, at present being held in Edinburgh, left the Capital for a day at the Clyde Coast. The delegates, representing approximately forty-five countries, left Edinburgh, Scottish Region, in two special trains for Glasgow, to embark on the British Railways Clyde steamers, *Duchess of Hamilton* and *Caledonia* to sail down the river and afterwards cruise to Kyles of Bute. On the return journey the party entrained at Gourrock and arrived at Edinburgh (Waverley) about 10 o'clock.

Machine Tool Exhibition, Brussels.—Among the exhibits to be displayed by F. Burnerd & Co. Ltd. at its Third European Machine Tool Exhibition to be held at Brussels, September 4-17, will be a comprehensive range of Burnerd, Meehanite precision lathe chucks from 2½ in. to 28 in. diameter. The types include three- and four-jaw, gear scroll, self-centring; four-jaw, independent; reversible jaw; and direct mounting chucks. High precision instrument maker's chucks, and lever scroll chucks will also be exhibited. All chucks are covered by free replacement guarantee should the body break in service. All exports are packed

in metal airtight containers as a precaution against damage by humidity during storage. The Burnerd patented tool post will also be included.

Railway & General Engineering Co. Ltd.—A trading profit of £45,953 was recorded by the Railway & General Engineering Co. Ltd. for the year ended March 31, an increase of £8,432. The net profit of £8,503 shows an increase of £1,081. The ordinary dividend of 12½ per cent compares with 10 per cent in the preceding year. Carry-forward is increased from £10,610 to £13,235.

Record Steel Output for July.—Steel output, which was affected by normal holidays, averaged 276,600 tons a week, the highest rate recorded for the month, compared with 273,800 tons a week in July, 1952, and 276,300 tons a week in July, 1950, the previous record. Last month's figure represents an annual rate of 10,524,000 tons compared with 10,949,000 for the previous month. The production of steel in the first seven months of the year averaged 338,100 tons a week compared with 303,000 tons a week last year, an increase of 11 per cent. Pig iron production averaged 202,400 tons a week, compared with 201,600 tons in July, 1952.

Excursions for Tourist Trophy Race.—In connection with the Tourist Trophy Race on September 5, third class excursion tickets to Belfast via Heysham, Liverpool or Stranraer will be issued from all stations in Great Britain and by all routes. Tickets will be available on the outward journey on Tuesday, Wednesday or Thursday, September 1, 2 or 3, for return from Belfast on Tuesday, Wednesday or Thursday of the following week. Passengers will travel by ordinary trains and steamers, and the cost will be approximately single fare and a half for the return journey. Motorists will also be able to secure steamer excursion fares and port-to-port passage for their cars at single rate-and-a-half for the double journey.

Ebchester Station to Close.—British Railways announce that it is necessary to close Ebchester Station, North Eastern Region, to all traffic on and from Monday, September 21. Alternative transport is available; road services are operated by the Northern General and Venture Transport Companies between Newcastle and Consett, giving a bus every 15 minutes from a stop about a mile from the station. The present parcels collection and delivery service operating from Blaydon will continue and all other parcels traffic will be dealt with at Blackhill Station. Freight "smalls" traffic is at present concentrated at Blaydon and this will continue. Full load traffic requiring cartage service will be diverted to Rowlands Gill. Full load and other freight traffic not requiring a cartage service will be handled at Rowlands Gill or Blackhill Station, whichever is more convenient to customers.

Embossed Aluminium.—The British Aluminium Co. Ltd., is now producing embossed aluminium sheet, which, it is claimed, has practical advantages in industrial application when compared to the normal bright rolled finishes. This new type of finish is stated to be of particular advantage when used as linings for rolling stock baggage compartments, kicking plates, containers, and so on. In the industrial field the application includes ventilation ducting, storage bins, partitioning, lagging of heat insulators, and



Enlarged showroom of the Selson Machine Tool Co. Ltd. at Cunard Works

OFFICIAL NOTICES

The engagement of persons answering Situations Vacant advertisements must be made through a Local Office of the Ministry of Labour or a Scheduled Employment Agency if the applicant is a man aged 18-64 inclusive, or a woman aged 18-59 inclusive unless he or she, or the employment, is excepted from the provisions of the Notification of Vacancies Order, 1952.

RHODESIA RAILWAYS. VACANCY FOR ASSISTANT SIGNAL AND TELEGRAPH ENGINEER. A vacancy exists for an Assistant Engineer and Telegraph Engineer for service in the Chief Engineer's Department of the Rhodesia Railways. Single men between the ages of 26 and 30 are preferred, but married men not over 30 years of age may apply. It is desirable that applicants should have served with the British Railways in the Signal and Telegraph Communications Department and are Associate Members of the Institute of Railway Signal Engineers. It is essential that applicants have experience in the installation and maintenance of electrical and mechanical signalling and telecommunication equipment. The grades of Junior and Assistant Engineer have salary scales between the limits of £560 and £1,460 per annum with incremental notches of £40 per annum and the commencing salary would be determined in accordance with age and experience. The vacancy is for appointment to the temporary staff in the first instance but transfer to the Permanent Staff may be made to fill a vacancy and on the recommendation of the Chief Engineer. All salaries are enhanced by a variable Cost of Living Allowance which at present is 20% on basic rates. Full particulars may be obtained from the London Agent, RHODESIA RAILWAYS, 241, Salisbury House, London Wall, London, E.C.2.

BEARINGS: 250 brand new Timken taper roller bearings 598/592 for sale, new stock, surplus to requirements. Box 905, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

machinery hopper guards. The material is produced in a light or heavy stucco in sheets 8 ft. x 4 ft., and also in corrugated and trough section form.

Charles Roberts & Co. Ltd.—For the year to March 31 last group earnings of Charles Roberts & Co. Ltd. were £236,591, an increase of £21,206, and total income went up from £286,042 to £321,546. Group net profit is £14,682 higher at £111,584. In addition to maintaining the dividend at 20 per cent, the directors are to recommend the distribution of a further capital bonus.

Fishguard & Rosslare Railways & Harbours Company.—Net revenue for the half year ended June 30, 1953, of the Fishguard & Rosslare Railways & Harbours Company was £35,563. Of this sum, £13,904 was allocated to interest on debenture stock at 3½ per cent, and £21,659 to dividend on new guaranteed 3½ per cent preference stock. No dividend was declared on the ordinary shares or on the new 3½ per cent preference stock, 1914, as these are held by the parties guaranteeing the interest on the capital represented thereby.

Westinghouse Air Brake Company.—Sales by the Westinghouse Air Brake Company of the U.S.A. for the first six months of the current year amounted to \$69,305,948, a record for any half-year period in the company's history. The increase over the corresponding period in 1952 was \$23,993,368. The figures reflected the acquisition this year of two subsidiaries whose sales are now included in the parent company's results. Net income of the company before taxation for the half-year was \$9,826,488, comparing with \$11,523,362 a year ago.

A.E.C. Exhibits at Olympia.—Examples of its marine, stationary, and railcar units, with selected component parts, will be included among the A.E.C. exhibits at the Engineering & Marine Exhibition at Olympia, London, September 3-17. The railcar exhibit comprises the A.E.C.

ASSISTANT ENGINEER (RAILWAY SIGNALING) required by the CROWN AGENTS FOR THE COLONIES for the London Office. Salary scale £575 x 25 = 750 x 30 = £900. The £575 minimum is linked to entry at age 25 and is subject to increase at the rate of one increment for each year above that age up to but not exceeding age 34. Pay addition to basic salary 10% on first £500, 5% on remainder. Extra Duty Allowance of 8% on basic annual salary plus pay addition also payable at present. Fully qualified officers of at least 27 years of age who have completed at least two years' satisfactory service are eligible, under certain conditions, for a special increase in salary of £75. Engagement will be on unestablished terms, with a prospect, after satisfactory service, of appointment to the established and pensionable staff in due course, vacancies permitting, and of promotion to a higher grade. **QUALIFICATIONS:** Candidates must be Corporate Members of either the Institution of Railway Signal Engineers and/or the Institution of Electrical Engineers, or, if below the age of 26, have passed the Associate Membership Examination of either of these Institutions or hold an exempting degree. They must have served in the Signal Engineering Department of a railway or with a firm manufacturing signalling apparatus. They should have a detailed knowledge of such apparatus, both mechanical and electrical and of its application. A knowledge of Permanent Way will be an advantage. **DUTIES:** Will entail the preparation of Specifications for the purchase of signalling apparatus and railway track with all accessories and of contract drawings and layouts in connection therewith. Write to the CROWN AGENTS, 4, Millbank, London, S.W.1. State age, name in block letters. Full qualifications and experience and quote M2A/30117/RA.

BOUND VOLUMES.—We can arrange for readers' copies to be bound in full cloth at a charge of 25s. per volume, post free. Send your copies to the SUBSCRIPTION DEPARTMENT, Towhill Press Limited, 33, Tothill Street, London, S.W.1.

9-6-litre horizontal oil engine with fluid flywheel, epicyclic transmission unit, and final drive assembly, designed for under-floor installation in two- or four-axle railcars. Drivers' controls of the electro-pneumatic type are included. The marine propulsion unit comprises the A.E.C. 9-6-litre Comet Mark III oil-engine, direct coupled to a marine reverse gear with a 3-1 reduction. The stationary equipment will be represented by a self-contained 60-kW, diesel-alternator set, incorporating an A.E.C. 9-6 direct-injection stationary oil-engine flexibly coupled to a McFarlane self-regulating 50-cycle alternator.

Edgar Allen & Co. Ltd.—The report of Edgar Allen & Co. Ltd. for the year 1952-53 shows a group net profit of £265,199, a decrease of £102,060. The sums set aside for taxation were £403,861 this year and £416,003 in the preceding twelve months. A dividend of 10 per cent plus a bonus of 5 per cent is recommended on the ordinary capital of the company, which has been doubled to £861,890 by an issue of fully paid shares.

Spheroidal Cast Iron.—The exhibits of the Mond Nickel Co. Ltd. at the Engineering & Marine Exhibition, to be held at Olympia, London, from September 3-17, will be almost entirely devoted to a comprehensive display of spheroidal graphite cast iron, produced by a process patented by the company, whereby the graphite is present in the form of spheroids instead of flakes. Castings produced by this process, it is claimed, have the qualities of ordinary grey iron, and brittleness is very largely eliminated. This latter quality will be demonstrated by a simple apparatus which applies bending and twisting tests to spheroidal graphite cast iron strips.

National Road Transport Federation Report.—The annual report of the National Road Transport Federation for 1952-53 states that whilst in many countries important road developments are being effected, not only has there been no real road development in Great Britain, but

THE PERUVIAN CORPORATION have the following vacancies on the railways in Peru:—Central Railway, ACCOUNTANT (Traffic Auditor). About 30 years of age, preferably single with general auditing and railway accounting experience. Northern Railways, DIESEL ENGINEER with practical experience on diesel locomotives and railcars and workshop management. Southern Railway, ASSISTANT CHIEF STOREKEEPER—an experienced Railway Storekeeper with a knowledge of Spanish essential. GUAQUI LA PAZ RAILWAY—ASSISTANT ACCOUNTANT—Qualifications: man who has passed Intermediate Examination of recognised accountancy body preferred. Knowledge of railway accounts an advantage. Preferably single between 28/35 years of age. A knowledge of the Spanish Language is preferable in all these appointments or willingness to learn within 6 months. Apply: SECRETARY, 144, Leadenhall Street, London, E.C.3.

THE High Commissioner for India invites tenders for the supply of: BELTING, train lighting. Quantity 97,544 feet approximately. Forms of tender may be obtained from the Director-General, INDIA STORE DEPARTMENT, 32/44, Edgware Road, London, W.2, at a fee of 10/- which is not returnable. Tenders are to be delivered by 2 p.m. on Friday, 25th September, 1953. Please quote reference No. 103/53 in your application.

INTERNATIONAL RAILWAY ASSOCIATIONS. Notes on the work of the various associations concerned with international traffic, principally on the European Continent. 2s. By post 2s. 2d. *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

N.E.R. HISTORY.—Twenty-Five Years of the North Eastern Railway, 1898-1922. By R. Bell, C.B.E., Assistant General Manager, N.E.R. and L.N.E.R. Companies, 1922-1943. Full cloth. Cr. 8vo. 87 pages. 10s. 6d.—*The Railway Gazette*, 33, Tothill Street, London, S.W.1.

that even road maintenance is officially admitted to be heavily in arrears. Revenue from motor taxation in 1952-53 will have reached some £350,000,000, whilst only some £33,000,000, it is pointed out, will have been spent on roads. The use of a far larger proportion of the proceeds from motor taxation for road development purposes is stated to be essential in the national interest.

American Car & Foundry Company: Annual Report.—The consolidated net earnings of the American Car & Foundry Company and subsidiaries for the fiscal year ended April 30 amounted to \$8,684,976, equal after preferred dividend requirements to \$10-10 per share on the outstanding common stock, compared to \$8-64 per share last year on fewer shares. This compares with net earnings of \$7,202,165 last year, according to the company's 54th annual report. Gross sales amounted to over \$257 million, an increase of approximately 47 per cent over 1952—which in turn was an increase of more than 45 per cent over 1951. As at June 1, the company had a backlog of orders amounting to approximately \$277 million, and working capital has increased from approximately \$53 million in 1952 to \$61 million. The disposal of surplus properties is almost completed; the largest surplus plants, Chicago, Detroit, Madison and Wilmington, have all been sold as well as certain other miscellaneous properties.

Murex Welding Equipment.—A representative range of products including welding equipment and electrodes will be exhibited by Murex Welding Processes Limited at the Engineering & Marine Exhibition to be held at Olympia, London, on September 3-17. The equipment will include a type 50 welding transformer multi-operator set, a new type 200 single-operator, air-cooled transformer having a current range of 15/200 amps., suitable for connection to any voltage between 200-240, and 400-800 V. Controls consist of a voltage selector and coarse and fine current selectors. A new 250/300 amp.

diesel engine-driven arc welding set incorporates Murex type LWG052 patent drooping characteristic generator having a current-range of 15/250 amp., for continuous hand-welding up to 300 amp. Practical demonstrations of various electrodes will also be given.

International Nickel Co. of Canada Ltd.

—In the six months ended June 30, the International Nickel Co. of Canada Ltd., and subsidiaries, earned \$29,205,595 net in terms of U.S. currency after all charges. In the previous six months the net earnings were \$25,353,055. For the corresponding first six months of 1952, net earnings were \$33,538,227. In a message to shareholders, Dr. J. F. Thompson, chairman of the company, notes that their organisation's studies to determine the corrosion-resisting properties of pure nickel and nickel-containing alloys date back almost a half century. This research, Dr. Thompson said, had made a great contribution to the extension of the use of these materials, and had been responsible for a broader recognition of the fact that nickel imparted its important corrosion-resisting properties to the alloys of which it forms a part.

Ruston & Hornsby Limited.—In the year ended March 31 last the group trading profit of Ruston & Hornsby Limited amounted to £2,328,939, an increase of £301,697. After allowance for charges, debenture interest, and taxation, the group net profit of £1,126,522 compared with £898,301. An ordinary dividend of 11 per cent, as in the previous year, plus a Coronation bonus of 1½ per cent, are recommended.

Public Services on Lancaster-Heysham

50-Cycle Electrification.—On August 17 the London Midland Region began operating the Lancaster-Morecambe-Heysham services with electric trains adapted for running on single-phase, 50-cycle a.c. at 6,600 V. From February 11, 1951, when the previous 25-cycle stock was withdrawn, to the present time, services have been maintained with steam trains. Experimental running with 50-cycle equipment began last year, as reported on page 646 of our December 12, 1952, issue. Various types of overhead superstructures are also under test, some of which were described and illustrated in our December 26 issue last year. The rectifier and traction installations in the three converted trains have been provided by the English Electric Co. Ltd., and the overhead structures on a demonstration section by British Insulated Callender's Construction Co. Ltd.

British Columbia Electric Railway Co. Ltd.

—The consolidated gross revenue of the British Columbia Electric Railway Co. Ltd. for 1952 showed an increase over the 1951 figure of 10·4 per cent, the 1952 figure being \$47,041,786. Operating expenses, including depreciation and provision for Canadian taxes amounted to \$42,338,374, an eight per cent increase over 1951, leaving an operating income of \$4,703,412. Net income, after deducting debenture and bond interest, was \$2,996,559. The dividends on preferred ordinary stock amounted to \$948,240 and on deferred ordinary stock, \$1,817,832. Balance forward amounted to \$105,693. The end of year report states that passengers carried by the urban transit system continued to decline. Largely as a result of increased rates, gross revenue for freight tonnage increased by 7·4 per cent although freight tonnage was unchanged in

volume from the previous year. By the end of the year, the conversion programme in the transit service had been completed except for six lines in Greater Vancouver, which represents less than 6 per cent of the total urban and interurban route mileage.

Forthcoming Meetings

August 19 (*Wed.*) to August 29 (*Sat.*).—Model Engineer Exhibition at the New Horticultural Hall, Westminster, London, S.W.1.

September 5 (*Sat.*).—Permanent Way Institution, Newcastle Section. Joint visit by launch along the River Tyne with the Edinburgh and the Lancaster, Barrow and Carlisle Sections.

September 6 (*Sun.*).—Railway Correspondence & Travel Society. East Anglian Special tour, leaving Bishops-gate Goods at 11.15 a.m.

September 8 (*Tue.*).—Permanent Way Institution, Leeds & Bradford Section, in the British Railways Social & Recreational Club, Ellis Court, Leeds City North Station, at 7 p.m. Paper on "The Maintenance of Switches & Crossings," illustrated with lantern slides, by Mr. D. P. Adams, of Sandiacre.

September 12 (*Sat.*).—Permanent Way Institution, East Anglia Section, at Ipswich at 2.15 p.m. Paper on "New Bridges for Old," by Mr. W. H. Weston, Western Region, British Railways.

Railway Stock Market

The upward trend of values in the gilt-edged and industrial sections has made further progress, and generally markets have been cheerful, although shortage of stock due to absence of selling was again the main factor making for the rise in prices. The encouraging export trade figures for the past month helped sentiment a good deal, as did attention drawn to many indications of confidence in the future, notably the abolition of further controls in recent months and the decision to permit switching in Canadian securities. It is realised that conditions in export markets are becoming increasingly competitive, but on the other hand the assumption is that the improvement in our gold and dollar reserves will continue in the current six months, though at a smaller rate than in the first half of the year. Buying of industrial shares has been due to wider recognition that most companies can be expected to maintain their dividends, and that yields on this basis are not unattractive in many cases.

There is now much less talk of the prospect of a lower bank rate, though on the other hand, the view is increasing that free convertibility of the £ is likely, possibly before the end of the year. Moreover, as regards markets, it continues to be widely foreshadowed that over the next few months the rise in values is likely to be accelerated. It is being pointed out that as the market is short of stock, prices are bound to respond strongly if sustained demand develops.

Foreign rails were rather more active, but without outstanding features. There was again a fair amount of speculative interest in Dorada ordinary stock, the recently-issued accounts having had the effect of emphasising that the current price of the stock is much below its break-up value based on assets, and that assets values would of course be the basis of any take-over offer in the future. After dipping to 55 following an earlier advance, the ordinary stock has rallied to 57 at the time of going to press.

There were again minor fluctuations in United of Havana stocks, awaiting further news from Cuba which could give a clearer indication of the significance to stockholders of the Cuban Government's plan. At the time of going to press, the "A" stock is changing hands around 67, the "B" around 65, the second income stock around 22½ and the consolidated stock around 3½.

There has been rather more attention given to Manila Railway issues, but sellers predominated. The "A" debentures were

78, while the "B" eased to 68, the preference shares to 7s. 10½d. and the ordinary shares to 3s.

Elsewhere, Guayaquil & Quito first bonds have marked £36½. Taltal shares were 15s. 3d. and Nitrate Rails 20s. 9d. Antofagasta ordinary stock was 8½, and the preference stock 42½. Mexican Central "A" debentures have been active and higher at 81½, while National of Mexico 4½ per cent bonds attracted around \$22½ and the "B" bonds around \$42½. Among Indian rails, Eastern Bengal "A" marked 52s. 6d.

In home stocks, Metropolitan Assented changed hands at 44. Algoma Central income debentures were dealt in up to \$252. Canadian Pacifics at \$47½ were lower on balance, but the preference stock held firm at £66½, while the 4 per cent debentures strengthened to £85½. White Pass no par value shares were \$27½ and less active with the 5 per cent convertible debentures at £98. In other directions, San Paulo units were quoted at 5s. 6d.

Road transport shares again showed firmness with Southdown at 31s., Lancashire Transport 51s. 6d. and West Riding 34s. 3d. B.E.T. deferred 5s. units have been active around 28s. 9d. Business up to 28s. was recorded in Potteries Motor Traction ordinary shares and at 23s. 6d. in Ribbles Motor Services 6½ per cent preference.

Engineering shares have been firmer with Guest Keen at 50s. 9d., Tube Investments 60s. and Babcock & Wilcox 66s. 3d., though elsewhere, Ruston & Hornsby eased to 38s. 9d. on the chairman's references to the changed conditions in export trade. John Brown at 35s. 9d. were lower owing to the fall in profits, which the directors say was due mainly to the effect of fluctuations in the price of tungsten on the results of the engineering subsidiaries. Despite the lower profits, John Brown's unchanged 7½ per cent, tax free, dividend remains well covered. T. W. Ward have been firm at 74s. There is continued speculation in the market as to which will start the steel issues in the early autumn. Prevailing belief is that it will be either Stewarts and Lloyds or Dorman Long, and the first-named seems to be the general expectation.

Beyer Peacock have been firm at 34s., Birmingham Carriage were 28s. 4½d., Hurst Nelson 41s. and North British Locomotive 12s. 6d. Vulcan Foundry were 20s. 6d. and Gloucester Wagon 10s. shares 13s. 6d. Charles Roberts 5s. shares were 16s. 4½d. following publication of the annual report.